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THE PORTS OF SAN FRANCISCO, REDWOOD CITY, AND HUMBOLDT BAY, CALIFORNIA

PORT SERIES NO. 30
REVISED 1991

U. S. ARMY
CORPS OF ENGINEERS

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PORT SERIES NO. 30
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THE PORTS OF SAN FRANCISCO, REDWOOD CITY AND HUMBOLDT BAY, CALIFORNIA

PREPARED BY
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INTRODUCTION

This report on the Ports of San Francisco, Redwood City, and Humboldt Bay, California, is published as No. 30 of the Port Series. It supersedes a similar report revised in 1983.

The reports in the Port Series cover the principal United States coastal, inland, and Great Lakes ports, and are compiled and published by the Port Facilities Branch, Water Resources Support Center, U.S. Army Corps of Engineers, under authority of Section 7 of the River and Harbor Act of July 19, 1918, Section 500 of the Transportation Act of February 28, 1920, and Section 8 of the Merchant Marine Act of 1920.

Acknowledgment is made of the valuable assistance given by the Commander, U.S. Army Engineer District, San Francisco, California; facility operators; port organizations; shipping and transportation companies; and city officials in the work of compiling data for this report.

Unless otherwise stated, the information contained in this report was current upon completion of field survey in July 1989. Additional revised data have been included through May 1990.

All data for this report was collected and processed by personnel of the Port Facilities Branch, Water Resources Support Center. We invite user comments to help us maintain an accurate and current port data file inasmuch as there is an average seven years interval between revisions. Please report any errors, additions, deletions, and changes directly to Water Resources Support Center, Port Facilities Branch, Casey Building, Fort Belvoir, Virginia 22060-5586, telephone number (703) 355-2495, telefax number (703) 355-3171.

METRIC CONVERSION TABLE

Section 3 of Public Law 94-163, the Metric Conversion Act of 1975, declares that the policy of the United States shall be to coordinate and plan the increasing use of the metric system in the United States.

As an initial step, in accordance with the Metric Conversion Act of 1975, this Metric Conversion Table is included in this Port Series Report.

MULTIPLY	BY	TO OBTAIN
Inches	2.54001	Centimeters
Feet	0.304801	Meters
Miles, statute	1.60935	Kilometers
Square Feet	0.0929034	Square meters
Acres	0.404687	Hectares
Pounds per square foot	4.88241	Kilograms square meter
Tons, short	0.907185	Metric tons
Tons, long	1.01605	Metric tons
Gallons	3.78543	Liters
Degrees, Fahrenheit	5/9 (F-32)	Degrees, Celsius
Barrels, oil	1.58988	Hectoliters
Bushels	0.0352391	Cubic meters

THE PORT OF SAN FRANCISCO, CALIFORNIA

PORT AND HARBOR CONDITIONS

LOCATION AND GENERAL DESCRIPTION

San Francisco is located on the northern portion of a peninsula which separates the southern part of San Francisco Bay from the Pacific Ocean; the city covers the width of the peninsula. The principal waterfront facilities of the port extend from Fort Mason on the north side, around to Hunters Point on the east side of the peninsula, a distance of nearly 10 miles. The bay is more properly described as a series of connecting bays and harbors of which San Francisco Bay (southern portion), San Francisco Bay (northern portion), and San Pablo Bay are the largest bodies of water. The entire bay system has an area of about 450 square miles, varying from deep water to tidal flats, with a shoreline of more than 200 miles.

San Francisco Bay proper is of generally deep water with depths up to 216 feet. Several islands of importance are within the bay area: Angel Island, northeast of the inner end of the Golden Gate; Alcatraz Island, about 1.5 miles south of Angel Island and one mile north of the San Francisco waterfront; and Yerba Buena Island, about 1.5 miles east of the waterfront facilities at San Francisco. Treasure Island is a manmade island approximately one mile long and 2/3 mile wide; it is in the bay northwest of Yerba Buena Island to which it is connected by a solid fill causeway.

Outside the entrance to San Francisco Bay, a semi-circular bar extends from a point about 1/2 nautical mile westward of Point Bonita to a point approximately three-fourths nautical mile offshore, 3 nautical miles southward of Point Lobos. The extreme seaward point of the bar lies about 5 miles south-southwest of Point Bonita. Except for the dredged portion of the Main Ship Channel, depths over the bar range from 31 to 36 feet near the southern end to the shoaliest area near the northern end, known as Four Fathom Bank (Potatopatch Shoal), where depths of less than 24 feet exist.

Entrance to the bay from the Pacific Ocean is through a strait known as the "Golden Gate"; it varies in width from one to three miles and has maximum depths of more than 350 feet. The Golden Gate is approximately 548 nautical miles south of the mouth of the Columbia River and 368 nautical miles north of Los Angeles, and it can be entered through one of three channels--the Bonita Channel, parallel to the coast north of Point Bonita; the Main Ship Channel which crosses the bar from a southwest direction; and the South Channel, parallel to the coast south of Point Lobos. The controlling depth in the Main Ship Channel is 55 feet; the Bonita and South Channels should not be used by vessels drawing over 18 and 15 feet, respectively.

North of the entrance, the principal communities on the western side of San Francisco Bay are Sausalito, Tiburon, and San Rafael; south of the entrance are San Francisco, South San Francisco, San Mateo, and Redwood City. On the eastern side of the bay are Richmond, Berkeley, Emeryville, Oakland, and Alameda.

HARBOR AND CHANNEL IMPROVEMENTS BY THE UNITED STATES

The existing project, authorized by the River and Harbor Act of 25 July 1868 and modified by subsequent acts of which the latest are dated 26 August 1937 and 25 October 1965, provides for dredging a channel through the San Francisco Bar on the line of the Main Ship Channel, 55 feet deep and 2,000 feet wide; the removal of Presidio Shoal, Black Point Shoal, Rincon Reef Rock (inner), Rincon Reef Rock (outer), Blossom Rock, and Alcatraz Shoal, westward of a north and south line 2,500 feet west of Alcatraz Light, to a depth of 40 feet; the removal of Arch Rock, Shag Rocks 1 and 2, Harding Rock, Raccoon Shoal, and Point Knox Shoal, westward of a north and south line through Point Stuart Light and a portion of the shoal channelward of the pierhead line near the mouth of Islais Creek to a depth of 35 feet, and for dredging a channel 750 feet wide and 10 feet deep from that depth in the bay to San Francisco International Airport ending in a basin 10 feet deep and approximately 2,000 feet in width.

The project, exclusive of the approach to Islais Creek, was completed in February 1974. The Islais Creek portion was authorized November 1972 by Chief of Engineers under provisions of Section 107 of the River and Harbor Act of 1960, as amended, providing for a channel 500 feet wide and 40 feet deep, with a new approach adjacent to the Army Street Terminal 35 feet deep, which was completed May 1977. All depths refer to mean lower low water (MLLW). The tidal range between mean lower low water and mean higher high water is 5.7 feet at Fort Point and 7.2 feet at the San Francisco International Airport. The extreme ranges at the foregoing localities are 10.6 and 12 feet, respectively.

The following table shows controlling depths and status of shoals and channels leading to, and within the Port of San Francisco. The latest National Oceanic and Atmospheric Administration Nautical Charts, and Notice to Mariners issued by the United States Coast Guard should be consulted prior to transiting these waters.

SECTION	CONTROLLING DEPTH AT MLLW	DATE OF LAST SURVEY	REMARKS
Main Ship Channel.....	55.0	May 1990	-
Presidio Shoal.....	44.9	May 1972	Dredging sand
Alcatraz Shoal.....	29.0	September 1969	do.
Point Knox shoal.....	38.2	June 1968	do.
Islais Creek Shoal.....	33.0	November 1967	-
Rincon Reef (inner rock)....	42.5	August 1951	Blasted-not maintained.
Rincon Reef (outer rock)....	42.5	August 1951	do.
Blossom Rock.....	42.0	December 1971	do.
Arch Rock.....	36. 2	June 1973	do.

HARBOR AND CHANNEL IMPROVEMENTS BY LOCAL INTERESTS

Under the requirements of the project, local interests performed initial dredging of Islais Creek Channel to 34-foot depth, and contributed one-half of the initial cost of dredging the San Francisco International Airport Channel and Basin. The Act of August 26, 1937, required that local interests furnish, free of cost to the United States, suitable bulkheaded spoil disposal areas

for maintenance of the channel to the San Francisco International Airport. All requirements have been complied with.

In addition, The Port of San Francisco completed dredging two approach channels to their San Francisco Container Terminal South, in November, 1987, which they also maintain. The north channel, Channel A, is 500 feet wide with widening to approximately 2200 feet at inner end, with a length of approximately 4000 feet and depth of 42 feet at MLLW. The south channel, Channel B, is 600 feet wide with widening to approximately 720 feet at inner end, with a length of approximately 2200 feet and depth of 42 feet at MLLW.

ANCHORAGES

Federally designated anchorages have been established in the San Francisco and San Pablo Bays, Carquinez Strait, Suisun Bay, and the San Joaquin and Sacramento Rivers. The following limits of the areas and their uses from the United States Coast Pilot 7, Twenty-fifth Edition, 1989 published by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service, are furnished for reference only.

San Francisco Bay

(1) Anchorage No. 4.

Bounded by the west shore of San Francisco Bay and the following lines: Beginning on the shore southwest of Point San Quentin at 37°56'28"N., 122°28'54"W.; thence east-southeasterly to 37°55'55"N., 122°26'49"W.; thence southwesterly to 37°54'13"N., 122°27'24"W.; thence southeasterly to the shore of Tiburon Peninsula at Point Chauncey at 37°53'40.5"N., 122°26'55"W.

When Explosives Anchorage No. 13 is activated by the Captain of the Port, it and the forbidden anchorage zone surrounding it are excluded from Anchorage No. 4.

Note. a. (Anchorages Nos. 4 through 14) When sustained winds are in excess of 25 knots each vessel greater than 300 gross tons using this anchorage shall maintain a continuous radio watch on VHF channel 13 (156.65 MHz) or, if unavailable, VHF channel 16 (165.80 MHz). This radio watch must be maintained by a person who fluently speaks the English language.

(2) Anchorage No. 5, Southampton Shoal.

In San Francisco Bay at Southampton Shoal bounded by a line connecting the following coordinates: 37°55'48"N., 122°25'52"W; to 37°55'50"N., 122°26'32"W; to 37°54'49"N., 122°26'39"W; to 37°54'03"N., 122°26'06"W; to 37°53'25"N., 122°25'30"W; to 36°53'23"N., 122°25'09"W; to 37°55'19"N., 122°25'33"W; to 37°55'42"N., 122°25'45"W; thence 37°55'48"N., 122°25'52"W.

(3) Anchorage No. 6.

Bounded by the east shore of San Francisco Bay and the following lines: Beginning at the shore of the southernmost extremity of Point Isabel at 37°53'46"N., 122°19'19"W.; thence westerly along the north shore of Brooks Island to the jetty extending westerly therefrom; thence westerly along the jetty to its bayward end at 37°54'13"N., 122°23'27"W.; thence south-southeasterly to 37°49'53"N., 122°21'39"W.; thence southeasterly to 37°49'32.5"N., 122°21'20.5"W.; thence easterly to 37°49'34"N., 122°20'13"W.; thence east-southeasterly to 37°49'30"N., 122°19'45.5"W.; thence east-northeasterly to the shore at Emeryville at 37°50'04"N., 122°17'41"W.; excluding from this area, however, the channel to Berkeley Marina delineated by lines joining the following points: 37°52'08"N., 122° 19'07"W. 37°52'03"N., 122°19'17.5"W. 37°52'00"N., 122°19.15.5"W. 37°51'01"N., 122°22'07"W.37°50'43"N., 122°22'00"W. 37°50'53"N., 122°21'32"W. 37°51'47"N., 122°18'59"W.

(4) Anchorage No. 7, Treasure Island.

In San Francisco Bay at Treasure Island bounded a line connecting the following coordinates: 37°49'36"N., 122°22'40"W; to 37°50'00"N., 122°22'57"W; to 37°50'00"N., 122°23'44"W; to 37°49'22.5"N., 122°23'44"W; to 37°48'40.5"N., 122°22'38"W; to 37°49'00.0"N., 122°22'16"W; thence along the shore to 37°49'36"N., 122°22'40"W.

Note c. This anchorage is primarily for use by vessels requiring a temporary anchorage waiting to proceed to pier facilities or other anchorage grounds. This anchorage may not be used by vessels for the purpose of loading any dangerous cargoes or combustible liquids unless authorized by the Captain of the Port.
Note d. Each vessel using this anchorage may not remain for more than 12 hours unless authorized by the Captain of the Port.
Note e. Each vessel using this anchorage shall be prepared to move within 1 hour upon notification by the Captain of the Port.

(5) Anchorage No. 8.

In San Francisco Bay bounded by the west shore of the Naval Air Station, Alameda and the following lines: Beginning at Oakland Inner Harbor Light 2 at 37°47'52"N., 122° 19'54"W.; thence west-northwesterly to 37°48'03"N., 122°20'57.5"W.; thence south-southwesterly to 37°47'56"N., 122°21'22.5"W.; thence southwesterly to 37°47'26"N., 122°21'41"W.; thence south-southeasterly to 37°47'00"N., 122°21'30"W.; thence southeasterly to Alameda Naval Air Station Channel Entrance Lighted Bell Buoy 1 at 37°46'38"N., 122°20'24"W.; thence easterly to 37°46'37"N., 122°19'56"W.; thence northerly to the shore of the Naval Air Station, Alameda, at 37°46'57"N., 122°19'52.5"W.

(6) Anchorage No. 9.

In San Francisco Bay bounded on the north by the shore, the breakwater and turning basin at the Alameda Naval Air Station and a line beginning at the Alameda Naval Air Station Channel Light 6 at 37°46'23"N., 122°19'02"W.; thence westerly to the Alameda Naval Air Station Channel Entrance Lighted Buoy 2 at 37°46'27"N., 122°20'24.5"W.; thence west-southwesterly to the San Francisco Bay South Channel Lighted Buoy 1 at 37°46'08"N., 122°21'45"W.; thence south-southeasterly to San Bruno Shoal Channel Light 1 at 37°41'44"N.,122°20'17.5"W.; thence south-southeasterly to San Bruno Shoal Channel Light 1 at 37°38'37"N., 122°18'43"W.; thence southeasterly to 37°36'05"N., 122°14'13.5"W.; thence east-northeasterly to the shore at 37°37'38.5"N., 122°W'02"W.; and bounded on the east by the shore; including all of San Leandro Bay excluding the pipeline areas therein. When Explosives Anchorage No. 12 or No. 14 is activated by the Captain of the Port, that anchorage and the forbidden anchorage zone surrounding it are excluded from Anchorage No. 9.

(7) Anchorage No. 10.

In San Francisco Bay bounded by the east shore of Sausalito and the following lines: Beginning on the shore of Sausalito at 37°51'20"N., 122°28'38"W.; thence southeasterly to 37°50'57.5"N., 122°27'57"W.; thence southwesterly to the shore of Sausalito at 37°50'36"N., 122°28'34"W.

(8) Anchorage No. 12.

In San Francisco Bay east of the city of San Francisco a circular area having a radius of 500 yards centered at 37°44'32.5"N., 122°20'27.5"W. A 667-yard-wide forbidden anchorage zone surrounds this anchorage.

Note. f. The maximum total quantity of explosives that may be on board a vessel using this anchorage shall be limited to 3,000 tons.

(9) Anchorage No. 13.

In San Francisco Bay east of the Tiburon Peninsula a circular area having a radius of 333 yards centered at 37°55'26"N., 122°27'27"W. A 667-yard-wide forbidden anchorage zone surrounds this anchorage except where such zone would extend beyond the limits of Anchorage No. 4.

Note e. Each vessel using this anchorage shall be prepared to move within 1 hour upon notification by the Captain of the Port.

Note g. The maximum total quantity of explosives that may be on board a vessel using this anchorage shall be limited to 50 tons except that, with the written permission of the Captain of the Port, each vessel in transit, loaded with explosives in excess of 50 tons, may anchor temporarily in this anchorage provided that the hatches to the holds containing explosives are not opened.

(10) Anchorage No. 14.

In San Francisco Bay east of Hunters Point an area 1,000 yards wide and 2,760 yards long, the end boundaries of which are semicircles, with radii of 500 yards and center, respectively at 37°42'52"N., 122°19'32.5"W.; and 37°42'14"N., 122°18'47"W.; and the side boundaries of which are parallel tangents joining the semicircles. A 667 yard-wide forbidden anchorage zone surrounds this anchorage.

Note f. The maximum total quantity of explosives that may be on board a vessel using this anchorage shall be limited to 3,000 tons.
Note h. Each vessel using this anchorage will be assigned a berth by the Captain of the Port on the basis of the maximum quantity of explosives that will be on board the vessel.

San Pablo Bay

(11) Anchorage No. 18.

In San Pablo Bay bounded by the west shore of San Pablo Bay and the following lines: Beginning at the shore at Point San Pedro at 37°59'16"N., 122°26'47"W.; thence easterly to 37°59'16"N., 122°26'26"W.; thence northerly to 38°03'46"N., 122°25'52.5"W.; thence northwesterly to the shore south of the entrance to Novato Creek at 38°05'13.5"N., 122°29'04"W.; excluding from this area,however, the channel to Hamilton Field and the extension of this channel easterly to the boundary of the anchorage, and the pipeline area therein.

(12) Anchorage No. 19.

In San Pablo Bay bounded by the northeast shore of San Pablo Bay and the following lines: Beginning at the shore of Tubbs Island at 38°07'39"N., 122°25'18"W.; thence southerly to 38°00'36"N., 122°25'20"W.; thence northeasterly to 38°03'13"N., 122°19'46"W.; thence east-northeasterly to 38°03'37"N., 122°17'13"W.; thence northerly to the long dike extending southwesterly from Mare Island at 38°03'52.5"N., 122°17'10"W.; thence along the long dike to the shore at Mare Island.

Note i. See 204.215 of this title establishing a target practice area in San Pablo Bay adjacent to the westerly shore of Mare Island for use of the Mare Island Navy Yard.

(13) Anchorage No. 20.

In San Pablo Bay bounded by the southeast shore of San Pablo Bay and the following lines: Beginning at the northeast corner of Parr Terminal No. 4 at Point San Pablo at 37°57'59"N., 122°25'35"W.; thence north-easterly to 38°01'27.5"W., 122°21'33"W.; thence east-northeasterly to the Union Oil Co. pier at Oleum at 38°03'18"N., 122°15'37"W.; and thence along this pier to the shore.

(14) Anchorage No. 21.

In San Pablo Bay south of Mare Island a rectangular area beginning at 38°03'56"N., 122°15'56"W.; thence easterly to 38°04'02"N., 122°15'20"W.; thence southerly to 38°03'48"N., 122°15'16"W.; thence westerly to 38°03'42"N., 122°15'52"W.; thence northerly to the point of beginning.

(15) Anchorage No. 24.

Bounded by the north shore of Carquinez Strait and the following lines: Beginning on the shore at Dillion Point at 38°03'44"N., 122°11'29"W.; thence southeasterly to 38°03'34"N., 122°11'10"W.; thence south-southeasterly to 38°03'17"N., 122°11'04"W.; thence southeasterly to the shore of Benicia at 38°02'37.5"N., 122°09'55"W.

Note j. Each vessel using this anchorage shall promptly notify the Captain of the Port, upon anchoring and upon departure.

(16) Anchorage No. 25.

Bounded by the south shore of Carquinez Strait and the following lines: Beginning on the shore at Point Carquinez at 38°02'09"N., 122°10'22"W.; thence east-southeasterly to 38°01'47"N., 122°08'57"W.; thence southeasterly to the shore of Martinez at 38°01'20"N., 122°08'42"W.

Note j. Each vessel using this anchorage shall promptly notify the Captain of the Port, upon anchoring and upon departure.

(17) Anchorage No. 26.

On the west side of Suisun Bay, adjacent to and northeast of the city of Benicia within the following boundaries: Beginning on the shore northeast of Army Point at 38°02'54"N., 122°07'37"W.; thence south-southeasterly along the Souther Pacific bridge to 38°02'38"N., 122°07'24"W.; thence easterly to 38°02'42"N., 122°07'07.5"W.; thence northeasterly to 38°05'42'N., 122°04'06"W.; thence northwesterly to the shore at 38°05'58"N., 122°04'28"W.; thence along the shore to the point of beginning.

Note k. See 162.270 of this title establishing restricted areas in the vicinity of the Maritime Administration Reserve Fleet.

(18) Anchorage No. 27.

In the northeast portion of Suisun Bay bounded by the north shore and the following lines: Beginning on the shore of Grizzly Island at 38°08'13"N., 122°02'42.5"W.; thence southerly to tripod at Preston Point on Roe Island at 38°04'16"N., 122°02'42"W.; thence along the south shore of Roe Island to

38°04'05"N., 122°01'35"W.; thence east-southeasterly to 38°03'42.5"N., 121°58'54"W.; thence easterly to the shore of Chipps Island at 38°03'42.5"N., 121°55'05"W.

San Joaquin River

(19) Anchorage No. 28.

The area bounded on the east by the shore of Lower Sherman Island and the following lines: Beginning at Point Sacramento on Lower Sherman Island at 38°03'45"N., 121°50'17.5"W.; thence southwesterly to 38°03'37.5"N., 121°50'31"W.; thence south-southeasterly to 38°02'11"N, 121°49'58"W; thence to the shore of Lower Sherman Island at 38°02'23"N., 121°49'49"W.

(20) Anchorage No. 30.

The portion of the Old San Joaquin River Channel bounded on the west by the shore of Mandeville Point and the following lines: Beginning on the shore of Mandeville Point at 38°04'01"N., 121°32'05"W.; thence northeasterly to 38°04'07.5"N., 121°31'58"W.; thence southeasterly to 38°03'47'N., 121°31'42.5"W.; thence westerly to the shore of Mandeville Point at 38°03'47.5"N., 121°31'56"W.

Sacramento River

Sacramento River, Decker Island Restricted Anchorage for Vessels of the U.S. Government.

(1) The anchorage ground.

An elongated area in the Sacramento River bounded on the west by the shore of Decker Island and the following lines: Beginning on the shore at Decker Island North End Light at latitude 38°06'16"N., longitude 121°42'32.5"W.; thence easterly to 38°06'15"N., 121°42'27"W.; thence southerly to 38°05'22"N., 121°42'30"W.; thence southwesterly to 38°05'08"N., 121°42'40"W.; thence west southwesterly to 38°05'02"N., 121°42'50"W.; thence northwesterly to the shore of Decker Island at 38°05'04"N., 121°42'52.5"W.

(2) Special Regulation.

No vessel or other craft except those owned by or operating under contract with the United States may navigate or anchor within 50 feet of any moored Government vessel in the area. Commercial and pleasure craft shall not moor to buoys or chains of Government vessels, nor may they, while moored or underway, obstruct the passage of Government or other vessels through the area.

Note.-The Corps of Engineers also has regulations dealing with this section in 33 CFR 207.

GENERAL REGULATIONS

The following regulations apply to the preceding Anchorage Nos. 4 through 30, inclusive, described above. The Decker Island Restricted Anchorage description includes its regulations.

(1) Within the navigable waters of San Francisco Bay, San Pablo Bay, Carquinez Strait, Suisun Bay, New York Slough, San Joaquin River Deep Water Channel, the Stockton Turning Basin, the Sacramento River Deep Water Ship Channel between Suisun Bay and the east end of the West Sacramento Turning Basin, and connecting waters, anchoring is prohibited outside of designated anchorages except when required for safety or with the written permission of the Captain of the Port. Each vessel anchoring outside an established anchorage area shall immediately notify the Captain of the Port of her position and reason for anchoring.

(2) No vessel may permanently moor in areas adjacent to the San Joaquin River Deep Water Channel except with the written permission of the Captain of the Port.

(3) Each vessel anchoring for safety reasons in the San Joaquin River Deep Water Channel, the Sacramento River Deep Water Ship Channel, or the Stockton or West Sacramento Turning Basins shall be positioned as near to the edge of the channel or turning basin as possible so as not to interfere with navigation, or obstruct the approach to any pier, wharf, slip, or boat harbor and shall move as soon as the reason for anchoring no longer exists or when notified to move by the Captain of the Port.

(4) No vessel may anchor within a tunnel, cable, or pipeline area shown on a Government chart.

(5) No vessel may moor, anchor, or tie up to any pier, wharf, or other vessel in such a manner as to extend into an adjacent channel or fairway.

(6) No vessel in such a condition that it is likely to sink or otherwise become a menace or obstruction to navigation or anchorage of other vessels may occupy an anchorage, except when unforeseen circumstances create conditions of imminent peril to personnel and then only for such period as may be authorized by the Captain of the Port.

(7) Each vessel carrying explosives shall only anchor in an explosives anchorage except as authorized by paragraph (1) or (17) of this section.

(8) No vessel other than a vessel under Federal supervision may go alongside or in any manner moor to any Government-owned vessel, mooring buoy, or pontoon boom, their anchor cables, or any of their appendages. No vessel other than a vessel under Federal supervision may obstruct or interfere in any manner with the mooring, unmooring, or servicing of vessels owned by the United States.

(9) The Captain of the Port may require any vessel in a designated anchorage area to moor with two or more anchors.

(10) Each vessel that will not have sufficient personnel on board to weigh anchor at any time shall anchor with two anchors with mooring swivel, unless otherwise authorized by the Captain of the Port.

(11) Deep-draft vessels shall take precedence over vessels of lighter draft in the deeper portions of all anchorages. Light-draft barges and vessels shall anchor away from the deeper portions of the anchorage so as not to interfere with the anchoring of deep-draft vessels. Should circumstances warrant, the Captain of the Port may require lighter draft vessels to move to provide safe anchorage, particularly in Anchorages 7 and 9, for deepdraft vessels.

(12) Barges towed in tandem to any anchorage shall nest together when anchoring.

(13) Each vessel that is notified by the Captain of the Port or his authorized representative to shift her position shall promptly shift her position.

(14) No person may use these anchorages for any purpose other than the purpose stated in these anchorage regulations.

(15) Where these regulations require that a vessel notify the Captain of the Port, the operator of the vessel shall transmit such report to the San Francisco Vessel Traffic Service.

Note.-Vessel Traffic Service guards VHF-FM Channel 13 (156.65 MHz) and Channel 16 (156.8 MHz).

(16) Nothing in this section may be construed as relieving any vessel or the owner or person in charge of any vessel from the penalties of law for obstructing or interfering with range lights or for not complying with the laws relating to lights, day signals, and fog signals and other navigation laws and regulations.

(17) The District Engineer, Corps of Engineers, may issue written permission for anchoring a single barge carrying explosives in quantities considered by the District Engineer as safe and necessary in the vicinity of work being done directly under the District Engineer supervision or under a Department of the Army permit. When issuing such a permit, the District Engineer shall prescribe the conditions under which the explosives must be stored and handled and shall furnish a copy of the permit and a copy of the rules and regulations for storing and handling to the Captain of the Port.

NAVAL ANCHORAGES

In addition to the preceding General Regulations, the following regulations apply to each naval anchorage described in this section.

(1) Naval anchorages are intended for public vessels of the United States, but may be used by other vessels when not required for use by public vessels.

(2) Other vessels using a naval anchorage shall promptly notify the Captain of the Port upon anchoring and upon departure and shall be prepared to move within one hour upon notice should the anchorage be required for public vessels.

EXPLOSIVE ANCHORAGES

In addition to the General Regulations, the following regulations apply to each explosives anchorage described in this section.

(1) Explosives anchorages and, where established, surrounding forbidden anchorage zones, are temporarily activated as needed by the Captain of the Port. When not activated, explosives anchorages and surrounding forbidden anchorage zones become part of the general anchorage which encompasses them or, if not located within the boundaries of a general anchorage, become available for general navigation.

(2) Notice of activation and deactivation of explosives anchorages will be disseminated by Coast Guard Broadcast Notice to Mariners.

(3) Each vessel which anchors in an explosives anchorage or surrounding forbidden anchorage zone while such anchorage is not activated shall be prepared to move within one hour if the anchorage is activated.

(4) Unless otherwise authorized by the Captain of the Port:

(i) No vessel may anchor in an activated explosives anchorage except vessels loaded with, loading, or unloading explosives.

(ii) No vessel may enter or remain in an activated explosives anchorage except (A) vessels loaded with, loading or unloading explosives, (B) lighters or barges delivering cargo to or from such vessels, or (C) a tug authorized by paragraph (7)(iii) of this section.

(iii) No vessel carrying explosives or on which explosives are to be loaded may enter or remain in an activated explosives anchorage without written permission from the Captain of the Port. Such a permit must be obtained before entering the anchorage and may be revoked at any time.

(iv) No vessel may anchor in the forbidden anchorage zone surrounding an activated explosives anchorage.

(5) Each vessel loaded with, loading, or unloading explosives, while within an explosives anchorage, shall display by day at her masthead, or at least 10 feet above the upper deck if the vessel has no mast, a red flag at least 16 square feet in area.

(6) Each passing vessel shall reduce speed as necessary so as to insure that its wake does not interfere with cargo transfer operations aboard any vessel displaying a red flag in an explosives anchorage.

(7) The Captain of the Port may:

(i) Issue permission to any vessel carrying flammable solids, oxidizing materials, corrosive liquids, flammable liquids, compressed gases, or poisonous substances to occupy a berth in an activated explosives anchorage. Such a permit must be obtained before entering the anchorage and may be revoked at any time.

(ii) Require any person having business on board a vessel which is loaded with, loading, or unloading explosives to have a document that is acceptable to the Coast Guard for identification purposes and to show that document to the Captain of the Port.

(iii) Require a non-self-propelled vessel, or a self-propelled vessel that is unable to maneuver under its own power, that occupies an activated explosives anchorage to be attended by a tug.

BRIDGES AND TUNNELS

Bridges crossing the navigable waters serving the Port of San Francisco are described in the table on the following page.

The Bay Area Rapid Transit Tunnel (BART) crosses under the San Francisco Bay from the San Francisco Port Commission's Ferry Building on the west side, in an east-northeasterly direction, thence at an angle between Piers D and E of the San Francisco-Oakland Bay Bridge, continuing south of Yerba Buena Island and under the northwest face of the Port of Oakland's Seventh Street Marine Terminal on the east side of the bay.

LIST OF BRIDGES

LOCATION AND NAME	TYPE	CLEARANCE IN FEET	
		HORIZONTAL	VERTICAL MHHW
San Francisco Bay			
Golden Gate	Suspension	4,028	225
North Tower	-	-	213
South Tower	-	-	211
San Francisco-Oakland Bay			
Piers A - B	Suspension	2,229	174/217
Piers B - C	do.	1,072	217/220
Piers C - D	do.	2,210	220/218
Piers D - E	do.	1,079	218/175
Piers G - H	Truss.	1,330	184/184
Richmond-San Rafael			
Main Channel	Fixed.	1,000	185
East Span	Fixed.	970	135
San Mateo-Hayward	Fixed.	500	135
Channel Street			
Third Street	Bascule.	103	1 (closed)
Fourth Street	Bascule.	75	do.
Islais Creek			
Third Street	Bascule.	97	4 (closed)

WEATHER CONDITIONS

San Francisco's unique location at the northern end of a narrow peninsula which separates San Francisco Bay from the Pacific Ocean and forms the southern shore of the Golden Gate--the only sea level entrance through the Coastal Mountains into the Great Valley--causes San Francisco to be known as the air-conditioned city, with cool pleasant summers and mild winters.

San Francisco enjoys a marine type climate characterized by mild and moderately wet winters and by dry cool summers. Winter rains, occurring from November through March, account for over 80 percent of the average annual rainfall, and measurable precipitation occurs on an average of 10 days per month during this period. However, there are frequent dry periods lasting well over a week. Severe winter storms with gale winds and heavy rains occur only occasionally. Thunderstorms average two a year and may occur in any month.

The daily and annual range in temperature is small. A few frosty mornings occur during the winter, but the temperature seldom drops below freezing. Winter temperatures generally rise to the high 50's in the early afternoon.

The summer weather is dominated by a cool sea breeze resulting in an average summer wind speed of nearly 15 miles per hour. Winds are light in the early morning, but normally reach 20 to 25 miles per hour in the afternoon.

A sea fog, arriving during the late evening or night as a low cloud, is another persistent feature of the summer weather. This "high" fog, occasionally producing drizzle or mist, usually disappears during the late forenoon. Despite the morning overcast, summer days are sunny. On the average, a total of only 14 days during the four months from June through September are classified as cloudy.

The information given below was compiled by the National Weather Service Station at the San Francisco International Airport and published by the Environmental Satellite Data and Information Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

METEOROLOGICAL DATA FOR PERIOD OF RECORD

TIME	NORMAL DAILY TEMPERATURE F°		NORMAL TOTAL PRECIPITATION (INCHES)	PREVAILING DIRECTION OF WINDS	HEAVY FOG* (DAYS)
	MAXIMUM	MINIMUM			
No. of years	28	28	28	60	50
January.....	55.5	59.0	4.67	WNW	3.8
February.....	59.0	44.1	3.23	WNW	2.7
March.....	60.6	44.9	2.64	WNW	0.4
April.....	63.0	46.6	1.53	WNW	0.1
May.....	66.3	49.3	0.32	W	0.1
June.....	69.6	52.0	0.11	W	*
July.....	71.0	53.3	0.03	NW	*
August.....	71.8	54.2	0.05	NW	0.2
September....	73.4	54.3	0.19	NW	0.7
October.....	70.0	51.2	1.06	WNW	1.5
November.....	62.7	46.3	2.35	WNW	2.3
December.....	56.3	42.2	3.55	WNW	3.5
Year	64.9	48.3	19.71	WNW	15.4

* Visibility 1/4 mile or less.

FISHERMAN'S WHARF, EAST MOORING BASIN
(P.W.D. Ref. No. 7)

SAN FRANCISCO PORT COMMISSION PIER NO. 39,
WEST MARINA EXCURSION BOAT LANDING
(P.W.D. Ref. No. 12)

SAN FRANCISCO PORT COMMISSION PIER NO. 45,
SHEDS B AND D
(P.W.D. Ref. No. 8)

SAN FRANCISCO PORT COMMISSION PIER NO. 35
(P.W.D. Ref. No. 13)

SAN FRANCISCO PORT COMMISSION GOLDEN GATE
FERRY SLIP, PIER 1/2
(P.W.D. Ref. No. 23)

SAN FRANCISCO PORT COMMISSION FERRY
PLAZA OUTER FERRY LANDINGS
(P.W.D. Ref. Nos. 24 and 25)

SAN FRANCISCO PORT COMMISSION, CONTAINER TERMINAL
NORTH (PIER NO. 80), ISLAIS CREEK BERTH
(P.W.D. Ref. No. 43)

SAN FRANCISCO PORT COMMISSION
PIER NO. 90, PORT OF
SAN FRANCISCO GRAIN TERMINAL
(P.W.D. Ref. No. 46)

SAN FRANCISCO PORT COMMISSION PIER NO. 92
(P.W.D. Ref. No. 47)

SAN FRANCISCO PORT COMMISSION, CONTAINER
TERMINAL SOUTH (PIER NOS. 94-96)
(P.W.D. Ref. No. 48)

VIEW OF SAN FRANCISCO PORT COMMISSION CONTAINER TERMINAL SOUTH (P.W.D. Ref. No. 48) IN FOREGROUND; CONTAINER TERMINAL NORTH (P.W.D. Ref. No. 43) IN BACKGROUND

THREE CONTAINER CRANES WORKING SHIP AT SAN FRANCISCO PORT COMMISSION, CONTAINER TERMINAL SOUTH (PIER NOS. 94-96) (P.W.D. Ref. No. 48)

SAN FRANCISCO PORT COMMISSION INTERMODAL CONTAINER TRANSFER FACILITY
WITH CONTAINER TERMINAL SOUTH (P.W.D. REF. NO. 48) IN BACKGROUND

THE PORT OF SAN FRANCISCO, CALIFORNIA

PORT AND HARBOR FACILITIES

PIERS, WHARVES, AND DOCKS

A total of 51 piers, wharves, and docks are described in this report for the Port of San Francisco. All but one of these facilities are located along the San Francisco Bay waterfront from Fort Mason on the north to India Basin on the south, and including 1 on China Basin, 4 on Islais Creek, and 2 on India Basin. One facility is located at Fort Baker in Marin County on the north end of the Golden Gate Bridge. Each facility is described under a reference number in the table of Piers, Wharves, and Docks beginning on page 22. These reference numbers designate facility locations on the accompanying Port Facilities map.

The table on the following page summarizes the functional uses of the various piers, wharves, and docks. Many of these facilities are used for multiple purposes, as indicated in the table; each can be identified by its respective P.W.D. reference number.

The waterfront facilities in the port area used exclusively by recreational or active military craft, and generally those docking facilities providing nonmaritime use are not included in this report. Non-active docking facilities in good physical condition are included.

The San Francisco Port Commission owns the facilities engaged in handling general cargo in the port. A summary of these facilities is given on page 21.

PURPOSE FOR WHICH USED

LOCATION	A	SAN FRANCISCO BAY																								
P.W.D. REFERENCE NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Cargo handling:																										
Newsprint																										
Seafood				o	o	o	o									o	o									
Ferry (passenger)										o																
Fueling (vessels)				o										o									o	o	o	
Icing (fishing vessels)					o			o																		
Passengers													o								o					
Mooring:																										
Exhibition vessels		o	o						o																	
Company-owned equipment																										
Government equipment	o																			o						
Fireboat																										
Fishing vessels				o	o	o	o	o						o												o
Excursion vessels										o	o	o	o													
Pilot boats																										
Miscellaneous									o									o	o			o				
Not used for handling waterborne commerce															o											

LOCATION	SAN FRANCISCO BAY																								
P.W.D. REFERENCE NUMBER	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	
Cargo handling:																										
General cargo:																										
Conventional									o								o					o				
Containerized									o								o					o				
Roll-on roll-off																	o					o				
Heavy lift items																	o					o				
Automobiles									o							o										
Coca (bagged)																					o					
Cottonseed oil																					o					
Fish meal																o										
Fuel oil for plant consumption																			o							
Grain								o													o					
Heavy machinery									o													o				
Newsprint								o													o					
Tallow																										
Waste (contaminated)								o																		
Marine repair				o	o				o	o		o	o											o	o	
Outfitting												o	o													
Conversion									o																	
Drydocking													o		o											
Mooring:																										
Company-owned floating equipment							o	o																		
Miscellaneous			o															o				o				
Not operated or used										o			o				o									
Not used for handling waterborne commerce	o	o	o																							

A - WEST SHORE, HORSESHOE BAY

SUMMARY OF GENERAL CARGO

P.W.D. REF. NO.	OPERATOR	BERTHING SPACE (FEET)	DEPTH ALONGSIDE (FEET)	TRANSIT SHEDS		OPEN STORAGE AREA (ACRES)
				NO.	CARGO SPACE (SQ. FT.)	
	San Francisco Port Commission					
16	Pier No. 29: Marine Terminals Corp.	801	35	1	150,000	-
17	Pier No. 27: Marine Terminals Corp.	1,358+206	35	1	175,000	2.3
30	Piers Nos. 30 and 32 (1)	622+845+932	40+35	-	-	12.7(1)
38	Piers Nos. 48A and 48B: Forest Terminals Corp.	369+610+636	35	2	121,500	0.5

				CONTAINER FREIGHT STATIONS		CONTAINER STORAGE CAPACITY
				NO.	CAPACITY (SQ.FT.)	
35	Pier No. 50, Mission Rock Terminal (Lower side): Western Rim Co., Ltd.	1,480	35	2	111,350	3 acres.
43	Container Terminal North (Pier No. 80): California Stevedore and Ballast Co.	1,138+1,296+ 2,456	40	2	393,000	69 acres. 5,200 TEU's
48,49	Container Terminal South (Piers Nos. 94-96): Stevedoring Services of America	2,456; 1,500	14-40	1	105,600	76 acres.(2) 12,500 TEU's

(1) At time of survey, piers had been heavily damaged by fire and were not usable for berthing. Containers were being stored on decks.
(2) Additional 75 acres available for development.

CORPS OF ENGINEERS PORT CODE NO.	82400 Dock Code No. 002	82202 Dock Code No. 143			82202 Dock Code No. 171		
REFERENCE NUMBER ON MAP NO.	1	2			3		
NAME	U.S. Coast Guard Station, East Fort Baker Mooring.	Fort Mason Pier 3.			Hyde Street Pier.		
LOCATION ON WATERFRONT	West shore, Horseshoe Bay, approximately 0.8 mile above Golden Gate Bridge (U.S. Highway 101 and State Route 1).	San Francisco Bay, below foot of Gough Street extended.			San Francisco Bay, below foot of Gough Street extended.		
OWNED BY	U.S. Government.	U.S. Government.			U.S. Government.		
OPERATED BY	U.S. Coast Guard.	National Park Service, U.S. Department of the Interior.			National Park Service, U.S. Department of the Interior.		
PURPOSE FOR WHICH USED	Mooring U.S. Coast Guard vessels.	Mooring Liberty Ship *Jeremiah O'Brien* on exhibition.			Permanently mooring vessels on exhibition.		
TYPE OF CONSTRUCTION	Timber-decked, concrete floats with two extensions, and 36- by 3.5-foot aluminum gangway approach from 30- by 18-foot concrete pile, concrete-decked pier. (See Remarks.)	Concrete pile, asphalt-surfaced, concrete-decked pier, fronted by timber fender system.			Timber pile, asphalt-surfaced, timber-decked pier.		
DESCRIPTION	Pier extensions	Face	Lower side	Upper side	Face	Lower side	Upper
Dimensions (Feet)	51 by 8, each.	160	660	520	20	960+150	820
Depth Alongside at MLLW Do.	10	25	25	25	20	20	20
Breasting Distance Do.	51 + 51, each.	See Remarks.	See Remarks.	520	See Remarks.	720	580
Total Berthing Space Do.	65 + 65, each.	See Remarks.	See Remarks.	520	See Remarks.	720	580
Width of Apron Do.	8	Open.			Open.		
Height of Deck at MLLW Do.	13.5	16, approx.			12		
Load Capacity (Lbs. per Sq. Ft.)	100, pier; 25, floats.	-			-		
Lighted or Unlighted	Lighted.	Lighted.			Lighted.		
TRANSIT SHEDS Number and Description	None.	See Remarks.			None.		
Length and Width (Feet)							
Height Inside Do.							
Floor Area for Cargo (Sq. Ft.)							
Load Capacity (Lbs. per Sq. Ft.)							
Cargo Doors							
MECHANICAL HANDLING FACILITIES	None.	None.			None.		
RAILWAY CONNECTIONS	None.	None.			None.		
HIGHWAY CONNECTIONS	Via Sommerville Road, from Alexander Road, each paved and various widths, from U.S. Highway 101 and State Highway 1.	Via Fort Mason Streets, from Marina Boulevard, paved, various widths.			Via Hyde Street, from Jefferson Street, both asphalt and 40 feet wide.		
WATER SUPPLY (For Vessels)	Through 1-inch line.	Through 4-inch line.			None.		
ELECTRIC CURRENT (For Vessels)	A.C., 110 volts.	A.C., 110 volts.			None.		
FIRE PROTECTION (Other Than City)	Hand extinguishers.	Hydrants, water line, and hand extinguishers.			Fire alarm system and hand extinguishers.		
REMARKS	Float extensions are spaced 40 feet apart, and served by 2-inch diesel fueling lines, two 2-inch waste oil pipelines extend to 3 portable 50-gallon tanks in 20- by 10-foot Bosun's Locker on pier, and one 1-inch compressed air line serves floats.	Former transit shed on wharf is used as exhibition hall. Lower side and face are not suitable for berthing due to wave and current action.			Timber deck has been removed from outer 240-foot portion. At time survey, the Maritime Exhibit included: *Balclutha*, *C.A. Thayer*, *Eureka*, *Eppleton Hall*, and the *Alma*. The *Hercules* and the *Wapama* will be returned to this pier after restoration.		

CORPS OF ENGINEERS PORT CODE NO.	02202 Dock Code No. 183			02202 Dock Code No. 184			02202 Dock Code No. 186		
REFERENCE NUMBER ON MAP NO.	4			5			6		
NAME	San Francisco Marine Fuel Dock.			Fisherman's Wharf, West Mooring Basin.			Fisherman's Wharf, Wharf J-7 and Pier No. 47A.		
LOCATION ON WATERFRONT	San Francisco Bay, west of foot of Hyde Street extended.			San Francisco Bay, between foot of Hyde and Jones Streets extended.			San Francisco Bay, between foot of Hyde and Jones Streets extended.		
OWNED BY	San Francisco Port Commission.			San Francisco Port Commission.			San Francisco Port Commission.		
OPERATED BY	G.P. Resources d.b.a. San Francisco Marina, and San Francisco Port Commission (See Remarks).			Various operators (See Remarks.)			San Francisco Seafoods, Inc.; Fisherman's Wharf Seafood, Inc.; and various lessees.		
PURPOSE FOR WHICH USED	Fueling small vessels and mooring fishing vessels.			Receipt of seafood; mooring and icing fishing vessels.			Receipt of seafood and mooring vessels (See Remarks).		
TYPE OF CONSTRUCTION	Timber pile, concrete-surfaced, timber-decked pier, fronted by 376- by 10-foot float with two parallel float extensions, each having additional float extensions forming berths alongside (See Remarks).			Basin formed by timber pile, asphalt-surfaced, timber-decked wharves on 3 sides.			Timber pile, asphalt-surfaced, timber-decked piers, with Pier 47A extending diagonally northward from east end of Wharf J-7.		
DESCRIPTION	Pier	West float	East float	Wharves J-9 & J-10	West side Wharf J-6	Wharf J-8	Wharf J-7	Pier 47A Inside	Pier 47A Outside
Dimensions (Feet)	180 by 150	747 by °	705 by 8	391+42+310	90	274+300	481 by 77	224	301+41
Depth Alongside at MLLW Do.	17	17	17	20	20	20	25	25	25
Berthing Distance Do.	180 + 376	See Remarks.	See Remarks.	391	26 berths	40 berths	481 + 77	224	301 + 41
Total Berthing Space Do.	180 + 376	29 berths	64 berths	391	26 berths	40 berths	481 + 77	224	301 + 41
Width of Apron Do.	12 & open.			10 and 30	25	20 and 8	2 & 30-35	44	44
Height of Deck at MLLW Do.	6			12			12		
Load Capacity (Lbs. per Sq. Ft.)	-			250			250		
Lighted or Unlighted	Lighted.			Lighted.			Lighted.		
MECHANICAL HANDLING FACILITIES	None (see remarks).			Six electric, mast-and-boom derricks with 12- to 15-foot booms for handling seafood.			One electric, mast-and-boom derrick with 15-foot boom located at west end of wharf J-7 for handling seafood.		
RAILWAY CONNECTIONS	None.			None.			None.		
HIGHWAY CONNECTIONS	Via Hyde Street from Jefferson Street, both paved, 40 feet wide.			Via Leavenworth Street, from Jefferson Street, both paved, 40 feet wide.			Via Jones Street, paved, 25 feet wide, from Jefferson Street, paved, 40 feet wide.		
WATER SUPPLY (For Vessels)	Through 1 1/2-inch line with 3/4-inch connection at each berth.			Through 3/4-inch line.			Through 1 1/2-inch lines.		
ELECTRIC CURRENT (For Vessels)	A.C., 110/220 volts.			None.			A.C., 110 volts.		
FIRE PROTECTION (Other Than City)	Hand extinguishers at pier and foam generator at tanks.			Hand extinguishers.			None.		
REMARKS	One 4-inch pipeline extends to metered pumps on pier from 2 storage tanks in rear, total capacity 9,500 barrels. At time of survey (September 1989), an existing timber pile, timber-decked fuel pier having 30-, 45-, and 63-foot berths was operating until planned facility (described above) is constructed in 1990. The floats will be permanently moored, and a breakwater constructed on north side forming protective basin. The west float will have fourteen 40- and twenty-five 50-foot berths on east side; the east float will provide fourteen 40-, and twenty 50- foot berths on west side, twenty-five 50 foot berths and five 170 foot berths on east side. The pier will provide fueling, sewage pump out station, work dock and hoist.			Several companies have facilities for receiving seafood on south side of the basin: Alioto Seafoods, F. Alioto Fish Co., Harbor Fisheries, Inc.; Standard Fisheries Corp., and California Shell Fish Co. are located along or at rear of Wharf J-10. Boat stalls are leased to individual vessel operators. Entrance to basin is approximately 95 feet wide. Fish processing plants located at rear of Wharves J-9 and J-10.			San Francisco Seafoods, Inc. receives seafood at building on outer end of Wharf J-7; Fisherman's Wharf Seafood, Inc. at Pier 47A.		

CORPS OF ENGINEERS PORT CODE NO.	82202 Dock Code No. 197				82202 Dock Code No. 195		82202 Dock Code No. 199	
REFERENCE NUMBER ON MAP NO.	7				8		9	
NAME	Fisherman's Wharf, East Mooring Basin.				San Francisco Port Commission Pier No. 45, Sheds B and D.		San Francisco Port Commission Pi No. 45, Sheds A and C.	
LOCATION ON WATERFRONT	San Francisco Bay, between foot of Jones and Taylor Streets extended.				San Francisco Bay, western end of The Embarcadero at foot of Taylor Street.		San Francisco Bay, western end o The Embarcadero at foot of Tayl Street.	
OWNED BY	San Francisco Port Commission.				San Francisco Port Commission.		San Francisco Port Commission.	
OPERATED BY	United Shell Fish Co.; and various lessees. (See Remarks.)				Various lessees. (See Remarks.)		San Francisco Port Commission an National Park Service, U.S. Department of the Interior.	
PURPOSE FOR WHICH USED	Receipt of seafood (Wharf J-6) and mooring fishing vessels.				Receipt of seafood, mooring and icing fishing vessels.		Mooring submarine *Pampanito* on exhibition; mooring transient vessels.	
TYPE OF CONSTRUCTION	Basin formed by timber pile, concrete-decked Wharf J-3 on the north, timber-decked Wharves J-5 on the south and J-6 on the west sides; concrete pile, concrete-decked Wharf J-1 forms the east side; Wharf J-4, a timber pile, asphalt-surfaced, concrete-decked pier, extends from Wharf J-1 midway between Wharves J-3 and J-5.				Concrete sheet pile retaining wall with concrete-surfaced solid fill; fronted by timber pile, asphalt-surfaced, timber-decked extensions.		Concrete sheet pile retaining wa with concrete-surfaced solid fil fronted by timber pile, asphalt- surfaced, timber-decked extensio	
DESCRIPTION	Wharf J-3	Wharf J-4	Wharf J-5	Wharf J-6	Face	North side	Face	North side
Dimensions (Feet)	360	300x22	300	20+65+38+135	1,200	140	1,314	180
Depth Alongside at MLLW Do.	20	17-20	17	20	35	-	35	-
Breasting Distance Do.	28*	40*	24*	25 + 12*	1,200	-	1,250	-
Total Berthing Space Do.	28*	40*	24*	25 + 12*	1,200	-	1,250	-
Width of Apron Do.	20	Open.	-	5 and open.	32 & 18		30	
Height of Deck at MLLW Do.	12				12		12	
Load Capacity (Lbs. per Sq. Ft.)	250				250		250	
Lighted or Unlighted	Lighted. *berths				Lighted.		Lighted.	
TRANSIT SHEDS Number and Description	None.				Two - steel frame, concrete walls and floors. (See Remarks.)		Two - steel frame, concrete wall and floors. (See Remarks.)	
					Shed B	Shed D	Shed A	Shed C
Length and Width (Feet)					575 by 123	615 by 88-12	570 by 123	624 by 123
Height Inside Do.					17	17	17	17
Floor Area for Cargo (Sq. Ft.)					47,150, net.	41,000 net.	46,800, net.	51,200, net.
Load Capacity (Lbs. per Sq. Ft.)					500	250	500	500 & 250
Cargo Doors					Shipside: eleven, 16 by 12; fourteen, 16, by 15; others: twenty-eight, 16 by 12; and one 37-foot wide door at inner end of Shed B.		Shipside: fourteen, 16 by 12; twelve, 16 by 15; others: twenty three, 16 by 12 and one, 6 by 1	
MECHANICAL HANDLING FACILITIES	Wharf J-6: One electric, mast-and-boom derrick with 12-foot boom for handling seafood.				Six electric mast-and-boom derricks with 12-foot boom for handling seafood.		None.	
RAILWAY CONNECTIONS	None.				Port Railroads, Inc.: two tracks on apron, one in rear of transit sheds, and two in center of pier.		Port Railroads, Inc.: one track along rear of transit sheds and in center of pier. (See Remarks.)	
HIGHWAY CONNECTIONS	Via Jefferson Street, asphalt, 40 feet wide.				Via the Embarcadero, paved, 45 to 70 feet wide. (See Remarks Ref. No. 7.)		Via the Embarcadero, asphalt, 45 70 feet wide. (See Remarks.)	
WATER SUPPLY (For Vessels)	Wharf J-5: Through 2-inch line; Wharf J-4: Through 1-inch line.				Through 4-inch line with 2-inch connections.		Through 4-inch line with 2-inch connections.	
ELECTRIC CURRENT (For Vessels)	Wharf J-4: A.C., 110 volts.				A.C., 110/208/448 volts.		A.C., 110 volts.	
FIRE PROTECTION (Other Than City)	None.				Hand extinguishers and 18-inch suction manholes.		Hand extinguishers and 18-inch suction manholes.	
REMARKS	United Shell Fish Co. has facilities for receiving and processing seafood on the east side of Wharf J-6. Entrance to basin is approximately 120 feet wide. The Embarcadero is a marginal and arterial thoroughfare owned by the San Francisco Port Commission serving all facilities between Fishermans Wharf and China Basin.				Sheds B and D, and Sheds A and B (F.W.D. Ref. No. 9) serve as fish processing plants. Operators are A. LaRocca Sea Food, Inc.; Bul Fish Co.,; California Aquatic Resources, Inc.; California Crawfish Co.; Cohan Seafood Co., Inc.; Deborah Ann Fish Co.; Fish Finders, Inc.; Golden Sea Fisheries; Long's Fish Company; Meatball Bait Distributor Co.; Monterey Fish Co.; Morgan Fish Co.; Seawin Fish Co.; and Polar Ice Co. (which ices fishing vessels via 6-inch line).		Transient vessels and naval ship moor at outer end. Transit shed are used for fish handling and processing (See Remarks, F.W.D. No. 9), and by agencies and othe directly engaged in the commerci fishing industry. Portions of railroad tracks on apron were pa over at time of survey.	

CORPS OF ENGINEERS PORT CODE NO.	82202 Dock Code No. 307		82202 Dock Code No. 213		82202 Dock Code No. 221	
REFERENCE NUMBER ON MAP NO.	10		11		12	
NAME	Pier No. 43 1/2 Ferry Docks.		Pier No. 41 Excursion Boat Docks.		San Francisco Port Commission Pier No. 39, West Marina Excursion Boat Landing.	
LOCATION ON WATERFRONT	San Francisco Bay, west of foot of Mason Street extended.		San Francisco Bay, east of foot of Powell Street extended.		San Francisco Bay, foot of Stockton Street extended.	
OWNED BY	Harbor Tug and Barge, Inc., subsidiary of Crowley Maritime Corporation.		Red and White Fleet, subsidiary of Crowley Maritime Corp.		San Francisco Port Commission.	
OPERATED BY	Harbor Carriers, Inc., d.b.a. Red and White Fleet.		Red and White Fleet, subsidiary of Crowley Maritime Corp.		Blue and Gold Fleet.	
PURPOSE FOR WHICH USED	Landing for passenger ferries serving Angel Island, Tiburon, Sausalito; and San Francisco Bay excursion boats.		Landing for excursion boats to Alcatraz Island, San Francisco Bay and Vallejo.		Landing for San Francisco Bay excursion boats.	
TYPE OF CONSTRUCTION	Two parallel, steel pontoon floats spaced 45 feet apart, each with a 4 1/2-foot wide, steel ramp approach.		Two parallel, steel pontoon floats spaced 85 feet apart, each with a 4 1/2-foot wide, steel ramp approach from concrete pile, concrete-decked wharf platform at rear.		Three styrofoam filled, timber-decked, concrete floats, and one steel float at inner end of basin, 3 connected by 12-foot wide float with 50- by 4-foot approach from east side, with a 55- by 6-foot approach from south side to steel float.	
DESCRIPTION	Floats		West float	East float	West floats	Steel float	East float
Dimensions (Feet)	80 by 20, each.		60 by 20	80 by 20	85+110 by 10	66 by 25	180 by 12
Depth Alongside at MLLW Do.	15		15	15	12	12	12
Berthing Distance Do.	160 + 160		160	120	85 + 110	66 + 66	180
Total Berthing Space Do.	160 + 160		160	120	85 + 110	66 + 66	180
Width of Apron Do.	Open.		Open.	Open.	Open.	Open.	Open.
Height of Deck at MLLW Do.	-		-	-	-		
Load Capacity (Lbs. per Sq. Ft.)	-		-	-	-		
Lighted or Unlighted	Lighted		Lighted.		Lighted.		
MECHANICAL HANDLING FACILITIES	None.		None.		None.		
RAILWAY CONNECTIONS	None.		None.		None.		
HIGHWAY CONNECTIONS	Via The Embarcadero, paved, 48 feet wide.		Via The Embarcadero, paved, 70 feet wide.		Via The Embarcadero, paved, 70 feet wide.		
WATER SUPPLY (For Vessels)	Through 2-inch line.		Through 2-inch line.		Through 1 1/2-inch line.		
ELECTRIC CURRENT (For Vessels)	A.C., 110/220 volts.		A.C., 110 volts.		A.C., 110 volts.		
FIRE PROTECTION (Other Than City)	Hand extinguishers.		Hydrants and hand extinguishers.		Hydrants and hand extinguishers.		
REMARKS	One 4-inch sewer connection for vessels serves each float. *Royal Night* of the Red and White Fleet generally uses landing, and others listed under Remarks of Pier No. 41 (F.W.D. Ref. No. 11) moor as required.		Dispatch office located in building at rear. *Harbor Emperor, Harbor King, Harbor Princess, Harbor Queen, Royal Prince, Royal Star, MIV Casablanca,* and *MIV Dolphin* generally use landings at this dock, and landings at Pier No. 43 1/2 (F.W.D. Ref. No. 10) as required. Company-owned boats fueled via fuel line from 10,000 gallon steel storage tank at rear, and a 4-inch sewer connection to city sewer line serves each berth.		An additional 100 feet of berthing space is available at outer end of parallel floats extending from Pier No. 39, which has been withdrawn from maritime use. There are approximately 66 additional berths in West Marina for recreational craft. Excursion boats *Oski, Old Blue, Golden Bear,* and *Golden Sunset* use moorings.	

CORPS OF ENGINEERS PORT CODE NO.	92202 Dock Code No. 233			92202 Dock Code No. 241			92202 Dock Code No. 246		
REFERENCE NUMBER ON MAP NO.	13			14			15		
NAME	San Francisco Port Commission Pier No. 35.			San Francisco Port Commission Pier No. 33.			San Francisco Port Commission No. 31.		
LOCATION ON WATERFRONT	San Francisco Bay, west of foot of Bay Street extended.			San Francisco Bay, foot of Bay Street extended.			San Francisco Bay, foot of San Street extended.		
OWNED BY	San Francisco Port Commission.			San Francisco Port Commission.			San Francisco Port Commission.		
OPERATED BY	California Stevedore and Ballast Co.			Various operators. (See Remarks.)			Various operators.		
PURPOSE FOR WHICH USED	Mooring cruise vessels; passengers.			Receipt of seafood; mooring fishing vessels.			Not used for handling waterborn commerce.		
TYPE OF CONSTRUCTION	Concrete pile, asphalt-surfaced, concrete-decked pier; 283-foot bulkhead on lower side with water depth of 30 feet alongside.			Concrete-jacketed timber pile, concrete-decked pier; 100-foot timber bulkhead on lower side with water depth of 35 feet alongside.			Concrete pile, concrete-decked a 263-foot platform of same construction fronting bulkhead lower side has water depth of feet alongside.		
DESCRIPTION	Face	Lower side	Upper side	Face	Lower side	Upper side	Face	Lower side	Upper
Dimensions (Feet)	200	802	1,053	150	787	687	150	638	582
Depth Alongside at MLLW Do.	35	35	35	35	35	35	35	35	35
Breasting Distance Do.	200	802	1,053	150	787	687	150	638	582
Total Berthing Space Do.	200	802	1,053	150	787	687	150	638	582
Width of Apron Do.	10	19	19	14	20	20	15	20	20
Height of Deck at MLLW Do.	12			12			12		
Load Capacity (Lbs. per Sq. Ft.)	500			500			600		
Lighted or Unlighted	Lighted.			Lighted.			Lighted.		
TRANSIT SHEDS Number and Description	One - timber frame, metal-covered. (See Remarks).			One - timber frame, concrete walls. (See Remarks.)			One - timber frame, concrete w		
Length and Width (Feet)	990 by 162; headhouse, 317 by 34			800 by 110; headhouse, 359 by 34			640 by 111; headhouse, 152 by		
Height Inside De.	26			20			22		
Floor Area for Cargo (Sq. Ft.)	171,200, total, net.			66,900 total, net.			66,600, total, net.		
Load Capacity (Lbs. per Sq. Ft.)	500			500			600		
Cargo Doors	Shipside: thirty-four, 19- by 14; eighteen, 19 by 22. Street side: one, 32 and two, 23 wide.			Shipside: thirty-one, 16 by 16. Street side: one, 32 and one, 23 wide.			Shipside: twenty-nine, 16 by street side: one, 34 and one, wide.		
MECHANICAL HANDLING FACILITIES	None.			None.			None.		
RAILWAY CONNECTIONS	Port Railroads, Inc.: one surface track on upper apron; one depressed track on lower apron.			Port Railroads, Inc.: one depressed track on lower apron; one surface track on upper apron.			Port Railroads, Inc.: one depr track on lower apron; one surfa track on upper apron.		
HIGHWAY CONNECTIONS	Via The Embarcadero, paved, 70 feet wide.			Via The Embarcadero, paved, 70 feet wide.			Via The Embarcadero, paved, 70 wide.		
WATER SUPPLY (For Vessels)	Through 6-inch line with 2-inch connections.			Through 6-inch line with 2-inch connections.			Through 6-inch line with 2-inch connections.		
ELECTRIC CURRENT (For Vessels)	A.C., 220 volts; D.C., 115/230 volts.			A.C., 208/480 volts.			A.C., 208 volts.		
FIRE PROTECTION (Other Than City)	Sprinkler system, 18-inch suction manholes, and hand extinguishers.			Hand extinguishers and 18-inch suction manholes.			Hand extinguishers and 18-inch suction manholes.		
REMARKS	Transit shed functions as a passenger terminal. Passengers board vessels via ramp from ground level and from waiting room on 2d floor of transit shed. A 280- by 80- to 130-foot shed is located along rear of bulkhead on lower side of pier.			Portion of transit shed is used as fish processing plant by Caito Fisheries, Inc.; City Seafoods of San Francisco; and Monterey Fish Market.			Platform at head of slip on low side has 40,000 square feet of storage area. Pier has been wi drawn from maritime use.		

...S OF ENGINEERS PORT CODE NO.	82202 Dock Code No. 251		82202 Dock Code No. 258		82202 Dock Code No. 262	
...RENCE NUMBER ON MAP NO.	16		17		18	
...	San Francisco Port Commission Pier No. 29.		San Francisco Port Commission Pier No. 27.		San Francisco Port Commission Foreign Trade Zone # 3, Pier No. 23.	
...CATION ON WATERFRONT	San Francisco Bay, below foot of Chestnut Street extended.		San Francisco Bay, above foot of Chestnut Street extended.		San Francisco Bay, foot of Greenwich Street extended.	
...ED BY	San Francisco Port Commission.		San Francisco Port Commission.		San Francisco Port Commission.	
...RATED BY	Marine Terminals Corp.		Marine Terminals Corp.		Foreign Trade Services, Inc.	
...POSE FOR WHICH USED	Receipt of newsprint.		Receipt of newsprint.		Occasional mooring of vessels. (See Remarks.)	
...PE OF CONSTRUCTION	Concrete pile, concrete-decked wharf; a 241-foot platform of same construction fronting bulkhead and headhouse on lower side has water depth of 25 feet alongside.		Concrete pile, asphalt-surfaced, concrete-decked wharf.		Concrete-jacketed, timber pile, concrete-decked pier.	
...SCRIPTION	Face		Face	Outer end	Face	Lower side	Upper side
...ensions (Feet)	801		1,358	206	160	700 + 110	638
...pth Alongside at MLLW Do.	35		35	35	35	35	35
...ssting Distance Do.	801		1,358	206	160	700	638
...tal Berthing Space Do.	801		1,358	206	160	700	638
...dth of Apron Do.	35		50	60-170	19	31	17
...ight of Deck at MLLW Do.	12		12		12		
...ad Capacity (Lbs. per Sq. Ft.)	500		600		600		
...ghted or Unlighted	Lighted.		Lighted.		Lighted.		
TRANSIT SHEDS Number and Description	One - timber frame, concrete walls.		One - steel frame, concrete walls; asphalt-surfaced concrete floor.		One - steel frame, concrete walls; asphalt-surfaced concrete floor.		
...ength and Width (Feet)	370 by 161; headhouse, 400 by 185.		1,270 by 175 outer end, 160 by 250.		714 by 113, headhouse, 150 by 105.		
...eight Inside Do.	22		22		18		
...loor Area for Cargo (Sq. Ft.)	150,000, total, net. (See Remarks.)		175,000 total. (See Remarks.)		64,600, total, net. (See Remarks.)		
...oad Capacity (Lbs. per Sq. Ft.)	500		600		600		
...argo Doors	Shipside: thirteen, 16 by 18 and one, 18 by 18; rear: twelve, 16 by 18.		Shipside: twenty-one, 18 by 18 and three, 26 by 19; outer end: one, 26 by 21; rear: twelve, 18 by 18-21; three, 26 by 20.		Shipside: twenty-three, 14 by 16 and six, 28 by 18; street side: one, 29 wide.		
...CHANICAL HANDLING FACILITIES	Company-owned equipment, including vacuum lifts for newsprint, available as required.		Company-owned equipment, including vacuum lifts for newsprint, available as required.		Equipment available as required.		
...AILWAY CONNECTIONS	Port Railroads, Inc.: two connecting surface tracks on apron, and one platform-level track at rear of transit shed.		Port Railroads, Inc.: two connecting surface tracks on apron, and one platform-level track at rear of transit shed.		Port Railroads, Inc.: one surface track on lower apron and one surface track on upper apron.		
...IGHWAY CONNECTIONS	Via The Embarcadero, paved, 70 feet wide.		Via The Embarcadero, paved, 70 feet wide.		Via The Embarcadero, paved, 70 feet wide.		
...ATER SUPPLY (For Vessels)	Through 6-inch line with 2-inch connections.		Through 4-inch line with 2-inch connections.		Through 4-inch line with 2-inch connections.		
...LECTRIC CURRENT (For Vessels)	A.C., 110/208/480 volts.		A.C., 480 volts.		A.C., 110/220 volts.		
FIRE PROTECTION (Other Than City)	Hand extinguishers and 18-inch suction manholes.		Sprinkler system in transit shed, chemical carts, and hand extinguishers.		Automatic alarm, hand extinguishers, and 18-inch suction manholes.		
...MARKS	Outer end of pier and transit shed are connected with those on Pier No. 27 (Ref. No. 17). Approximately 150,000 square feet of covered storage area and 1,400 square feet of open storage area are available.		Transit shed area includes outer 350-foot portion of Pier No. 29 transit shed (Ref. No. 16). Asphalt-surfaced open storage area includes 87,500 square feet at rear of transit shed and 15,000 square feet at outer portion of pier.		A 179-foot bulkhead at inner end of upper side has water depth of 30 feet, and extends to inner end of Pier No. 17 (Ref. No. 19). Transit shed on pier is connected to transit shed serving Pier No. 19 (Ref. No. 19) via headhouse shed at rear of bulkhead. Transit sheds are designated as Foreign Trade Zone No. 3, and operated by Foreign Trade Services, Inc. (S.W. Ref. No. 1).		

CORPS OF ENGINEERS PORT CODE NO.	82202 Dock Code No. 265			82202 Dock Code No. 268			82202 Dock Code No. 27		
REFERENCE NUMBER ON MAP NO.	19			20			21		
NAME	San Francisco Port Commission Foreign Trade Zone # 3, Pier No. 19.			San Francisco Port Commission Pier Nos. 17 and 15.			San Francisco Port Commissio No. 9.		
LOCATION ON WATERFRONT	San Francisco Bay, foot of Filbert Street extended.			San Francisco Bay, between foot of Union and Green Streets extended.			San Francisco Bay, foot of Va Street extended.		
OWNED BY	San Francisco Port Commission.			San Francisco Port Commission.			San Francisco Port Commissio		
OPERATED BY	Foreign Trade Services, Inc.			Bay and Delta Towing Co.			Harbor Tug and Barge, Inc., subsidiary of Crowley Maritim		
PURPOSE FOR WHICH USED	Occasional mooring of vessels. (See Remarks.)			Mooring company-owned floating equipment.			Landing for water taxis and passengers.		
TYPE OF CONSTRUCTION	Concrete-jacketed, timber pile, concrete-decked pier.			Concrete-jacketed, timber pile piers: lower side (Pier 17), asphalt-surfaced timber deck; center portion and upper side (Pier 15), asphalt-surfaced concrete deck; a 150-foot bulkhead on lower side has water depth of 30 feet alongside.			Concrete-jacketed, timber pil asphalt-surfaced, timber-deck pier; 195-foot bulkhead on lo side has a water depth of 25 alongside; 80- by 25-foot ste landing barge on lower side w gangway approach.		
DESCRIPTION	Face	Lower side	Upper side	Face	Lower side	Upper side	Face	Lower side	Upp
Dimensions (Feet)	153	638	800	485	710+190	800	154	800	800
Depth Alongside at MLLW Do.	35	35	35	35	35	35	35	35	35
Breasting Distance Do.	153	638	800	485	800	800	154	800	800
Total Berthing Space Do.	153	638	800	485	800	800	154	800	800
Width of Apron Do.	18	24	17	14 and 20	19	17	13	25	17
Height of Deck at MLLW Do.	12			12			12		
Load Capacity (Lbs. per Sq. Ft.)	500			500			500		
Lighted or Unlighted	Lighted.			Lighted.			Lighted.		
TRANSIT SHEDS Number and Description	One - steel frame, concrete walls; asphalt-surfaced concrete floor.			One - timber frame, wood siding. One - steel frame, concrete walls.			One - steel frame, concrete w		
				Pier No. 17	Pier No. 15				
Length and Width (Feet)	633 by 113, headhouse, 315 by 190			780 by 143	820 by 167		820 by 112		
Height Inside Do.	18			18	17		17		
Floor Area for Cargo (Sq. Ft.)	87,600, total net. (See Remarks.)			74,400, net.	99,300, net*		61,200, net. (See Remarks)		
Load Capacity (Lbs. per Sq. Ft.)	500			500			500		
Cargo Doors	Shipside: fourteen 16 by 16, fourteen 16 by 14, and three, 28 by 18; street side: one, 29 feet wide.			Shipside: two, 25 by 17, four, 22 by 18, seventeen, 18 by 16, and seventeen, 16 by 14-16; rear: three, 22 by 15 and thirty-two, 16 by 12; streetside: two, 25 by 18.			Shipside: two 16 by 20; twel by 17; fifteen, 16 by 12, and 12 by 12; street side: one, 2 wide.		
MECHANICAL HANDLING FACILITIES	Equipment available as required.			Equipment available as required.			None.		
RAILWAY CONNECTIONS	Port Railroads, Inc.: one depressed track on lower apron and one surface track on upper apron.			Port Railroads, Inc.: one surface track on lower apron; one surface track on upper apron; and one platform-level track along rear of each transit shed.			Port Railroads, Inc.: one su track on upper apron; one dep track on lower apron.		
HIGHWAY CONNECTIONS	Via The Embarcadero, paved, 70 feet wide.			Via The Embarcadero, paved, 70 feet wide.			Via The Embarcadero, paved, 7 wide.		
WATER SUPPLY (For Vessels)	Through 4-inch line with 2-inch connections.			Through 4-inch line with 2-inch connections.			Through 4-inch line with 2-inc connections.		
ELECTRIC CURRENT (For Vessels)	A.C., 220 volts.			A.C., 220 volts.			A.C., 110/220 volts on upper		
FIRE PROTECTION (Other Than City)	Automatic alarm, hand extinguishers, and 18-inch suction manholes.			Automatic fire detection and sprinkler system in transit sheds, hand extinguishers, and 18-inch suction manholes.			Hand extinguishers and 18-inch suction manholes.		
REMARKS	See Remarks under Pier No. 23 (Ref. No. 18).			*Includes space in 140- by 85-foot steel frame, concrete-walled shed connecting transit sheds at face. Approximately 27,000 square feet of open storage area is located in rear between piers, and an additional 6,000 square feet is at rear of bulkhead on lower side. Transit sheds are operated as cotton warehouses by Parker Warehouse, Inc. Cotton is handled by truck. Bay and Delta Towing Co. moors tugboats and 4 inflatable fenders for lightering tankers at Pier 15.			Transit shed serves as office nonmaritime operators.		

CORPS OF ENGINEERS PORT CODE NO.	82202 Dock Code No. 276			82202 Dock Code No. 288		82202 Dock Code No. 290	
REFERENCE NUMBER ON MAP NO.	22			23		24	
NAME	San Francisco Port Commission Pier No. 7 1\2.			San Francisco Port Commission Golden Gate Ferry Slip, Pier 1/2.		San Francisco Port Commission Ferry Plaza Outer Ferry Landing.	
LOCATION ON WATERFRONT	San Francisco Bay, below foot of Broadway extended.			San Francisco Bay, south of foot of Washington Street extended.		San Francisco Bay, below foot of Market Street extended.	
OWNED BY	San Francisco Port Commission.			San Francisco Port Commission.		San Francisco Port Commission.	
OPERATED BY	San Francisco Bar Pilots Association.			Red and White Fleet, subsidiary of Crowley Maritime Corp.		Golden Gate Bridge, Highway and Transportation District, Ferry Transit Division.	
PURPOSE FOR WHICH USED	Mooring pilot boats (See Remarks).			Landing for passenger ferries serving Tiburon and Vallejo.		Landing for passenger ferries serving Sausalito and Larkspur.	
TYPE OF CONSTRUCTION	Timber pile, asphalt-surfaced, timber-decked pier.			Steel pontoon float with 130- by 5 1/2-foot steel ramp and timber walkway approach extending from timber pile, timber-decked platform.		Floating, steel frame, rubber fender system, fronting 3 concrete-filled, pipe pile breasting dolphins, and 2 ramp supports; 70- by 24-foot adjustable steel ramp approach; one mooring dolphin on either side.	
DESCRIPTION	Face	Lower side	Upper side	Float		Face	
Dimensions (Feet)	13	120	120	80 by 20		43	
Depth Alongside at MLLW Do.	-	18-20	18-20	12		15	
Breasting Distance Do.	-	120	120	80 + 80		43	
Total Berthing Space Do.	-	120	120	80 + 80		78 w/dolphins.	
Width of Apron Do.	Open.			Open.		Open.	
Height of Deck at MLLW Do.	12			-		12, pier.	
Load Capacity (Lbs. per Sq. Ft.)	-			-		-	
Lighted or Unlighted	Lighted.			Lighted.		Lighted.	
MECHANICAL HANDLING FACILITIES	Two hand-operated davits for handling supplies and equipment.			None.		None.	
RAILWAY CONNECTIONS	None.			None.		None.	
HIGHWAY CONNECTIONS	Via The Embarcadero, paved, 70 feet wide.			Via The Embarcadero, paved, dual lane, each side 40 feet wide.		Via The Embarcadero, paved, dual lane, each side 40 feet wide.	
WATER SUPPLY (For Vessels)	Through 2-inch line.			None.		Through 2-inch line.	
ELECTRIC CURRENT (For Vessels)	A.C., 110-208 volts.			A.C., 110 volts.		A.C., 110/220 volts.	
FIRE PROTECTION (Other Than City)	Hand extinguishers and sand barrels.			None.		Hydrant and hand extinguishers.	
REMARKS	One 1 1/2-inch pipeline for fueling extends to pier from tank truck connection at rear. Dispatch office is located in building at rear. Pilot boats *California*, *Oakland*, *Drake*, *Pittsburg*, and *San Francisco* moor at pier.			-		Landing and adjacent landing (Ref. No. 27) extend from lower side of concrete pile, concrete-decked, Ferry Building Pier, designated as Ferry Plaza. Passenger waiting rooms are in buildings at rear, offices are located in Ferry Building at inner end.	

CORPS OF ENGINEERS PORT CODE NO.	02202 Dock Code No. 290	02202 Dock Code No. 316		02202 Dock Code No. 3		
REFERENCE NUMBER ON MAP NO.	25	26		27		
NAME	San Francisco Port Commission Ferry Plaza Inner Ferry Landing.	San Francisco Port Commission Pier No. 22 1/2.		San Francisco Port Commissio No. 24.		
LOCATION ON WATERFRONT	San Francisco Bay, below foot of Market Street extended.	San Francisco Bay, below foot of Harrison Street extended.		San Francisco Bay, below foo Harrison Street extended.		
OWNED BY	San Francisco Port Commission.	San Francisco Port Commission.		San Francisco Port Commissio		
OPERATED BY	Golden Gate Bridge, Highway and Transportation District, Ferry Transit Division.	San Francisco Fire Department.		Not operated. (See Remarks.)		
PURPOSE FOR WHICH USED	Landing for passenger ferries serving Sausalito and Larkspur.	Mooring fireboat *Phoenix*.		Not used for handling waterb commerce.		
TYPE OF CONSTRUCTION	Floating, steel frame, rubber fender system, fronting 4 concrete-filled, steel pipe pile breasting dolphins, and 2 ramp supports; 49- by 30- to 61-feet wide, adjustable, steel ramp approach; one mooring dolphin on either side, and one at rear.	Timber pile, timber-decked pier extending from lower side of timber pile, timber-decked platform.		Part concrete pile, concrete- and part timber pile, timber- pier.		
DESCRIPTION	Face	Pier	Platform	Face	Lower side	Upp
Dimensions (Feet)	97	125 by 30	65 by 15	130+40	760	660
Depth Alongside at MLLW Do.	15	15	15	45	35	35
Breasting Distance Do.	97	125	65	-	760	660
Total Berthing Space Do.	142 w/dolphins.	125	65	-	760	660
Width of Apron Do.	Open.	6-12	15	Bridge pier.	20	16
Height of Deck at MLLW Do.	12, pier.	12		12		
Load Capacity (Lbs. per Sq. Ft.)	-	-		600 and 250		
Lighted or Unlighted	Lighted.	Lighted.		Lighted.		
TRANSIT SHEDS Number and Description	None.	None.		One - timber frame, wood sidi		
Length and Width (Feet)				675 by 100		
Height Inside Do.				17		
Floor Area for Cargo (Sq. Ft.)				45,000, net.		
Load Capacity (Lbs. per Sq. Ft.)				600 and 250		
Cargo Doors				Shipside: twenty-three, 19- b street side: one 30 wide.		
MECHANICAL HANDLING FACILITIES	None.	None.		None.		
RAILWAY CONNECTIONS	None.	None.		None.		
HIGHWAY CONNECTIONS	Via The Embarcadero, paved, dual lane, each side 40 feet wide.	Via The Embarcadero, paved, 70 feet wide.		Via The Embarcadero, paved, 7 wide.		
WATER SUPPLY (For Vessels)	Through 2-inch line.	Through 2 1/2-inch line.		Through 4 - to 3-inch line wi 2-inch connections.		
ELECTRIC CURRENT (For Vessels)	A.C., 110/220 volts.	D.C., 110 volts.		A.C., 220 volts.		
FIRE PROTECTION (Other Than City)	Hydrant and hand extinguishers.	Hand extinguishers and fireboat.		Sprinkler system inside transi and under pier, water curtain outside of transit shed, and suction manhole.		
REMARKS	See Remarks, Ref. No. 24.	A hydrant for fireboat connection to supply high pressure to fire water mains is located at rear of bulkhead on upper side.		A San Francisco-Oakland Bay B pier is located at face of pie Pier has been withdrawn from maritime use.		

OF ENGINEERS PORT CODE NO.	82202 Dock Code No. 321			82202 Dock Code No. 325			82202 Dock Code No. 329		
RENCE NUMBER ON MAP NO.	28			29			30		
	San Francisco Port Commission Pier No. 26.			San Francisco Port Commission Pier No. 28.			San Francisco Port Commission Piers Nos. 30 and 32.		
ATION ON WATERFRONT	San Francisco Bay, above foot of Harrison Street extended.			San Francisco Bay, foot of Bryant Street extended.			San Francisco Bay, between foot of Bryant and Brannan Streets extended.		
ED BY	San Francisco Port Commission.			San Francisco Port Commission.			San Francisco Port Commission.		
RATED BY	Not operated. (See Remarks.)			Not operated.			Not operated. (See Remarks.)		
POSE FOR WHICH USED	Not used for handling waterborne commerce.			Not used for handling waterborne commerce.			Mooring vessels.		
E OF CONSTRUCTION	Concrete pile, concrete-decked pier; 193-foot bulkhead on lower side has water depth of 30 feet alongside.			Concrete column-supported concrete beams and asphalt-surfaced concrete deck; a 203-foot bulkhead on lower side has water depth of 25 feet alongside.			Concrete retaining wall with concrete-surfaced solid fill, fronted by concrete pile, asphalt-surfaced, concrete-decked extension; a 180-foot bulkhead on lower side has water depth of 25 feet alongside.		
CRIPTION	Face	Lower side	Upper side	Face	Lower side	Upper side	Face	Lower side	Upper side
ensions (Feet)	200	620	635	150	541	680	622	845	932
th Alongside at MLLW Do.	50	35	35	35	35	35	40	35	35
ating Distance Do.	200	620	635	150	541	680	622	845	932
al Berthing Space Do.	200	620	635	150	541	680	622	845	932
dth of Apron Do.	12	20	20	15	19	19	45	22	22
ight of Deck at MLLW Do.	12			12			12		
ad Capacity (Lbs. per Sq. Ft.)	600			500			600		
ghted or Unlighted	Lighted.			Lighted.			Lighted.		
NSIT SHEDS mber and Description	One - steel and timber frame, wood siding, concrete floor.			Two - steel frame, concrete walls, concrete floors.			None.		
		Bulkhead shed		Pier	Bulkhead				
ngth and Width (Feet)	750 by 160	195 by 137		113 by 665	195 by 136				
ight Inside Do.	25	25		22	27				
oor Area for Cargo (Sq. Ft.)	80,000	17,800		50,100, net	18,000 net				
ad Capacity (Lbs. per Sq. Ft.)	600	-		500	500				
rgo Doors	Shipside: continuous overhead doors.			Shipside: forty, 20 by 18; street side: one, 35 wide.					
CHANICAL HANDLING FACILITIES	None.			None.			None.		
ILWAY CONNECTIONS	Port Railroads, Inc.: one depressed track on lower apron and one surface track on upper apron.			Port Railroads, Inc.: one surface track on lower apron; one depressed track on upper apron.			None.		
HWAY CONNECTIONS	Via The Embarcadero, paved, 70 feet wide.			Via The Embarcadero, paved, 70 feet wide.			Via The Embarcadero, paved, 70 feet wide.		
TER SUPPLY (For Vessels)	Through 4-inch line with 2-inch connections.			Through 4-inch line with 2-inch connections.			None.		
CTRIC CURRENT (For Vessels)	A.C., 220 volts, D.C., 110/220 volts.			A.C., 120/240 volts.			None.		
E PROTECTION (Other Than City)	Sprinkler system inside transit shed and under pier, water curtain on outside of transit shed, and 18-inch suction manhole.			Eight-inch fire water line, hand extinguishers and 18-inch suction manholes.			None.		
MARKS	Bulkhead shed is located at rear of 193-foot bulkhead on lower side. Transit sheds on Pier Nos. 24, 26, and 28 are connected by bulkhead sheds.			-			Both piers were damaged by fire which destroyed transit sheds on each pier. The piers are useable for mooring, and open areas are used for container storage.		

CORPS OF ENGINEERS PORT CODE NO.	82202 Dock Code No. 340			82202 Dock Code No. 344			82202 Dock Code No. 370	
REFERENCE NUMBER ON MAP NO.	31			32			33	
NAME	San Francisco Port Commission Pier No. 36.			San Francisco Port Commission Pier No. 30.			San Francisco Port Commission No. 46B.	
LOCATION ON WATERFRONT	San Francisco Bay, between foot of Brannan and Townsend Streets extended.			San Francisco Bay, foot of Townsend Street extended.			San Francisco Bay, north side China Basin below Third Street Bridge.	
OWNED BY	San Francisco Port Commission.			San Francisco Port Commission.			San Francisco Port Commission.	
OPERATED BY	Service Engineering Company, Inc.			Service Engineering Company, Inc.			Westar Marine Services.	
PURPOSE FOR WHICH USED	Mooring vessels for repair.			Mooring vessels for repair.			Mooring company-owned vessels, tugboats and small craft.	
TYPE OF CONSTRUCTION	Inner 400 feet: Concrete columns supporting concrete-encased steel beams and concrete deck; remainder timber pile, asphalt-surfaced, timber deck; a 138-foot bulkhead on lower side has water depth of 25 feet alongside.			Concrete pile, part steel- and part concrete-decked pier, with timber apron on north side, asphalt-surfaced apron on south side; 138-foot bulkhead on lower side has water depth of 25 feet alongside.			Concrete bulkhead with solid fi lower 423 feet fronted by timbe pile, timber-decked extension a remainder by concrete caisson supported concrete-decked exten	
DESCRIPTION	Face	Lower side	Upper side	Face	Lower side	Upper side	Face	
Dimensions (Feet)	100+101	714	610	155	895	909	1,037	
Depth Alongside at MLLW Do.	25	30	25	35	35	35	35	
Breasting Distance Do.	100 + 101	714	610	155	895	909	1,037	
Total Berthing Space Do.	100 + 101	714	610	155	895	909	1,037	
Width of Apron Do.	Open.	17	10, open.	15	29	17	21	
Height of Deck at MLLW Do.	12			12			12	
Load Capacity (Lbs. per Sq. Ft.)	500			600			600	
Lighted or Unlighted	Lighted.			Lighted.			Lighted.	
TRANSIT SHEDS Number and Description	One - irregularly-shaped; outer portion: timber frame, wood siding; inner portion: steel frame, concrete walls.			One - steel frame, concrete walls.			Two - 2-story, concrete walls a floors.	
							Transit shed	Annex, trian
Length and Width (Feet)	690 by 33-10			920 by 109			812 by 135	888 by 200
Height Inside Do.	27			22			10	10
Floor Area for Cargo (Sq. Ft.)	28,300 (See Remarks)			66,800			73,100	59,200
Load Capacity (Lbs. per Sq. Ft.)	500			600			-	-
Cargo Doors	-			Shipside: fifty-one, 20 by 10-foot; street side: one, 20 and one, 24 feet wide.			Shipside: 1st floor, fifteen, 10; 2d floor, nineteen, 10 by 1	
MECHANICAL HANDLING FACILITIES	"Derrick Barge 4": 90-ton, diesel, revolving, floating crane with 107-foot boom, mounted on 120- by 60- by 10-foot barge. In addition, three 10-ton, diesel, mobile cranes, each with 100-foot, telescopic boom; and twelve forklift trucks up to 4-ton capacity. Equipment also serves repair facilities on adjacent Pier 38 (Ref. No. 32).			Use of floating and mobile equipment described under Ref. No. 31.			Two unused, timber, traveling, semiportal, cargo platforms on at 2d floor level.	
RAILWAY CONNECTIONS	Port Railroads, Inc.: one surface track serves upper side of pier.			Port Railroads, Inc.: one surface track on upper apron.			Port Railroads, Inc.: one surfa track on apron; three serve shed	
HIGHWAY CONNECTIONS	Via The Embarcadero, paved, 70 feet wide.			Via The Embarcadero, paved, 70 feet wide.			Via The Embarcadero, paved, 70 f wide.	
WATER SUPPLY (For Vessels)	Through 4-inch line with 2-inch connections.			Through 4- becoming 3-inch line with 2-inch connections.			Through 3-inch line with 2-inch connections.	
ELECTRIC CURRENT (For Vessels)	A.C., 440 volts; 1,000 amps.			A.C., 440 volts at 2,600 amps; D.C., 200 volts at 400 amps.			A.C., 120/208 volts; D.C., 115 volts.	
FIRE PROTECTION (Other Than City)	Submersible 1,000 gpm pump with 6-inch line.			Submersible 1,000 gpm pump with 6-inch line.			Hand extinguishers.	
REMARKS	Transit shed is used as a marine repair fabrication shop. One 2 1/2-inch steam line, and manifolds for compressed air, chemolene and oxygen serve pier. "Derrick Barge 4" has capacity of 90 tons at 10-, and 48 tons at 60-feet outboard, and auxiliary hook capacity of 25 tons with flat boom.			Transit shed is used as a marine repair fabrication shop. One 2 1/2-inch steam line, and manifolds for compressed air, chemolene and oxygen serve pier.			Space on 1st floor of transit sh and annex has been leased to va operators for non-maritime use.	

CE OF ENGINEERS PORT CODE NO.	92202 Dock Code No. 446			92202 Dock Code No. 455			92202 Dock Code No. 478		
ERENCE NUMBER ON MAP NO.	34			35			36		
E	San Francisco Port Commission Pier Nos. 48A and 48B.			San Francisco Port Commission Pier No. 50, Mission Rock Terminal.			San Francisco Port Commission, Pier No. 54.		
ATION ON WATERFRONT	San Francisco Bay, south of entrance to China Basin.			San Francisco Bay, foot of Mission Rock Street extended.			San Francisco Bay, foot of Fourth Street extended.		
ED BY	San Francisco Port Commission.			San Francisco Port Commission.			San Francisco Port Commission.		
RATED BY	Forest Terminals Corp.; and H & H Environmental Services, Division of H & H Ship Service Co., Inc.			Western Rim Company, Ltd.; and Continental Maritime of San Francisco, Inc. (See Remarks).			Continental Maritime of San Francisco, Inc. (See Remarks).		
OSE FOR WHICH USED	Receipt of newsprint, contaminated slops, oil, and waste water, mooring company owned floating equipment. (See Remarks.)			Receipt and shipment of conventional and containerized general and refrigerated cargo, machinery and generators; receipt of bagged coca; mooring vessels for repair, outfitting and conversion.			Mooring vessels for repair.		
E OF CONSTRUCTION	Concrete pile, concrete-decked pier with timber pile, timber-decked lower and upper apron extensions.			Concrete retaining wall with concrete-surfaced solid fill, fronted by concrete pile, asphalt-surfaced, concrete-decked extensions.			Concrete pile, concrete-decked pier.		
CRIPTION	Face	Lower side	Upper side	Face	Lower side	Upper side	Face	Lower side	Upper side
ensions (Feet)	369	610	636	1,000	1,480	1,100 + 575	150	770	680
th Alongside at MLLW Do.	35	35	35	45	35	35	25	25	25
ating Distance Do.	369	610	636	1,000	1,480	1,100 + 575	150	770	630
al Berthing Space Do.	369	610	636	1,000	1,480	1,100 + 575	150	770	630
th of Apron Do.	15	30	30	Open.	30	30-32	15	25	25
ight of Deck at MLLW Do.	12			12			12		
ad Capacity (Lbs. per Sq. Ft.)	500			1000			250		
ghted or Unlighted	Lighted.			Lighted.			Lighted.		
NSIT SHEDS mber and Description	Two - steel frame, concrete walls and floors.			Four - A and B - timber frame; C and D, steel frame; all concrete walls and floors. (See Remarks.)			One - steel frame, metal-covered.		
	Shed A	Shed B		Sheds A & B	Shed C	Shed D			
ngth and Width (Feet)	690 by 124	705 by 124		650 by 115	615 by 150	705 by 150	300 by 75		
ight Inside Do.	17	17		17, each	17	17	20		
or Area for Cargo (Sq. Ft.)	57,000, net.	64,500*, net.		99,700 total*	61,500*	70,800*	15,000, net		
ad Capacity (Lbs. per Sq. Ft.)	-	-		-	-	-	250		
rgo Doors	Shipside: twenty-six, 15 by 16; and three, 16 by 14; rear: twenty-four, 16 by 12; and three, 16 by 14. Street side: one 20 feet wide.			Shipside: fifty-eight, 16 by 15; eight, 24 by 6; and four, 16 by 11-14; and two, 38 by 16. * net storage available.			Shipside: three, 12 by 18; other: one, 18 wide; street side: one, 20 wide.		
HANICAL HANDLING FACILITIES	Stevedore equipment is available as required.			Western Rim Company, Ltd.: stevedore equipment as required; Continental Maritime of San Francisco, Inc.: one 90-ton, diesel, mobile crane with 200-foot boom; two 18-ton, diesel, mobile cranes, each with 120-foot telescopic boom; and twelve 2-ton, LP-gas fork lift trucks.			Use of mobile equipment described under Ref. No. 35.		
AILWAY CONNECTIONS	Port Railroads, Inc.: two surface tracks on each apron, 3 platform level tracks between transit sheds.			Port Railroads, Inc.: two surface tracks each apron, 2 to 7 center tracks serve transit sheds C and D.			None.		
IGHWAY CONNECTIONS	Via China Basin Street, paved, 72 feet wide, from Third Street, paved, 60 feet wide.			Via Mission Rock Street, paved, 78 feet wide, from Third Street, paved, 60 feet wide.			Via China Basin Boulevard, paved, 60 feet wide, from Third Street, paved, 60 feet wide.		
ATER SUPPLY (For Vessels)	Through 4-inch line with 2-inch connections.			Through 6-inch line with 2-inch connections.			Through 6-inch line with 4-inch connections.		
LECTRIC CURRENT (For Vessels)	A.C., 110/220 volts.			A.C., 110/208/220/480 volts.			A.C., 120/240/440 volts.		
IRE PROTECTION (Other Than City)	Hand extinguishers and 18-inch suction manholes.			Hand extinguishers and 18-inch suction manholes.			Hand extinguishers and 18-inch suction manholes.		
MARKS	*Includes space in 140- by 64-foot connecting transit shed at face. H&H Environmental Services moors floating equipment at inner end of lower side, discharging contaminated products via hose to 5 steel storage tanks at rear, total capacity 23,800 barrels. Approximately 21,000 square feet of open storage area is available between transit sheds when rail tracks are not in use.			Western Rim Company, Ltd. operates lower side of pier, and transit sheds "A" and "C" as container freight stations, with shed "C" having six 240 volt outlets for refrigerated containers. Approximately 5 acres of open storage area is available. Continental Maritime of San Francisco, Inc. operates face and upper sides of pier and transit sheds "B" and "D" as marine repair plant.			Transit shed is used as a marine repair plant. Company planned to move operations and equipment to Pier 50 (P.W.D. Ref. No. 35).		

CORPS OF ENGINEERS PORT CODE NO.	82202 Dock Code No. 518		82202 Dock Code No. 521			82202 Dock Code No. 52		
REFERENCE NUMBER ON MAP NO.	37		38			39		
NAME	Southwest Marine, San Francisco Division, Pier No. 1.		Southwest Marine, Inc., San Francisco Division, Pier No. 3.			Southwest Marine, Inc., San Francisco Division, Pier No. 4		
LOCATION ON WATERFRONT	San Francisco Bay, south side of Central Basin at foot of 19th Street extended.		San Francisco Bay, south side of Central Basin at foot of 19th Street extended.			San Francisco Bay, south side Central Basin at foot of 19th extended.		
OWNED BY	San Francisco Port Commission.		San Francisco Port Commission.			San Francisco Port Commission.		
OPERATED BY	Southwest Marine, Inc., San Francisco Division.		Southwest Marine, Inc., San Francisco Division.			Southwest Marine, Inc., San Francisco Division.		
PURPOSE FOR WHICH USED	Not used. (See Remarks.)		Mooring vessels for outfitting and repair.			Mooring vessels for outfitting repair; mooring floating drydo (See Remarks.)		
TYPE OF CONSTRUCTION	Timber pile, timber-decked wharf. (See Remarks.)		Steel pile, concrete-decked pier, fronted by timber fender system.			Steel pile, concrete-decked pi fronted by timber fender syste		
DESCRIPTION	Face	Outer end	Face	West side	East side	Face	West side	Eas
Dimensions (Feet)	400	32	44	703	656	44	659	593
Depth Alongside at MLLW Do.	15	-	27-30	27	30	38-49	37	35
Breasting Distance Do.	400	-	-	650	658	-	Drydock.	593
Total Berthing Space Do.	400	-	-	650	658	-	Drydock.	593
Width of Apron Do.	Open.		Open.			Open.		
Height of Deck at MLLW Do.	12		12			12		
Load Capacity (Lbs. per Sq. Ft.)	300		1,000			1,000		
Lighted or Unlighted	Unlighted.		Lighted.			Lighted.		
MECHANICAL HANDLING FACILITIES	None.		One 35- and one 22-ton, electric, traveling, revolving, full-portal, gantry cranes, each with 90-foot boom. Two diesel, mobile cranes; one 22 1/2-ton with 80-foot boom and one 15-ton with 60-foot boom. Mobile equipment is available for use throughout plant (P.W.D. Ref. Nos. 37 through 41.)			Two electric, traveling, revolv full-portal, gantry cranes; on 50-ton with 130-foot boom and 40-ton with 110-foot boom. Us mobile equipment described und Ref. No. 38.		
RAILWAY CONNECTIONS	None.		None.			None.		
HIGHWAY CONNECTIONS	Via plant road, various widths, from 20th Street, paved, 20 feet wide and Third Street, paved, 60 feet wide.		Via plant road, various widths, from 20th Street, paved, 20 feet wide and Third Street, paved, 60 feet wide.			Via plant road, various widths, 20th Street, paved, 20 feet wi Third Street, paved, 60 feet wi		
WATER SUPPLY (For Vessels)	None.		Through 4-inch line with 2-inch connections.			Through 4-inch line with 2-inch connections.		
ELECTRIC CURRENT (For Vessels)	None.		A.C., 120/208/440 volts; D.C., 230 volts, through portable generator.			A.C., 120/208/440 volts; D.C., volts.		
FIRE PROTECTION (Other Than City)	Emergency response team, hydrants, hose, hand extinguishers, chemical carts, and security patrol.		Emergency response team, hydrants, hose, hand extinguishers, chemical carts, and security patrol.			Emergency response team, hydra hose, hand extinguishers, chemi carts, and security patrol.		
REMARKS	At time of survey (September 1989), pier was in poor condition and would need repairs prior to being reactivated.		Pier equipped with telephone connections and service lines for compressed air, water, electricity, steam, acetylene gas, and oxygen.			Pier equipped with telephone connections and service lines f compressed air, water, electric steam, acetylene gas, and oxyge Floating Drydock No. 1, lifting capacity 22,000 long tons, is m along west side.		

CORPS OF ENGINEERS PORT CODE NO.	82202 Dock Code No. 526			82202 Dock Code No. 528			82202 Dock Code No. 540	
REFERENCE NUMBER ON MAP NO.	40			41			42	
NAME	Southwest Marine, San Francisco Division, Pier No. 5.			Southwest Marine, San Francisco Division, Drydock No. 2 High Water Platform.			San Francisco Port Commission Pier No. 70.	
LOCATION ON WATERFRONT	San Francisco Bay, south side of Central Basin at foot of 19th Street extended.			San Francisco Bay, south side of Central Basin at foot of 19th Street extended.			San Francisco Bay, between foot of 20th and 19th Streets extended.	
OWNED BY	San Francisco Port Commission.			San Francisco Port Commission.			San Francisco Port Commission.	
OPERATED BY	Southwest Marine, Inc., San Francisco Division.			Southwest Marine, Inc., San Francisco Division.			Fred F. Noonan Co., Inc., and Pacific Gas and Electric Co.	
PURPOSE FOR WHICH USED	Not used. (See Remarks.)			Mooring floating drydock.			Receipt and shipment of automobiles; receipt of fuel oil for plant consumption.	
TYPE OF CONSTRUCTION	Timber pile, timber-decked pier, fronted by timber fender system.			Irregular-shaped, steel pile, concrete-decked platform; offshore row of four 34- by 15-foot, steel pipe pile, concrete-capped breasting dolphins in line with west section (See Remarks.)			Steel-jacketed, concrete piles with part asphalt-surfaced, timber-decked pier supported on steel frame; pier extends at right angle from 475- by 120- to 170-foot approach pier; one steel pile, concrete-capped breasting dolphin in line with west side.	
DESCRIPTION	Face	West side	East side	Platform: West section	Platform: East section		Face	East side	West side
Dimensions (Feet)	90	746	818	70 by 65 and 104	50 x 65		80	1,300	1,180
Depth Alongside at MLLW Do.	29-30	31-39	28-48	55-60	55-60		35	35	35
Breasting Distance Do.	-	746	818	Drydock. (See Remarks.)			-	1,300	1,180
Total Berthing Space Do.	-	746	818	Drydock. (See Remarks.)			-	1,300	1,180
Width of Apron Do.	Open.			Open.			Open.		
Height of Deck at MLLW Do.	12			12			12		
Load Capacity (Lbs. per Sq. Ft.)	500			1,000			500		
Lighted or Unlighted	Lighted.			Lighted.			Lighted.		
MECHANICAL HANDLING FACILITIES	Two 35-ton, electric, traveling, revolving, full-portal, gantry cranes, each with 90-foot boom, were not in use at time of survey.			Two 60-ton, electric traveling, revolving, full-portal, gantry cranes, each with 90-foot boom and 20-foot jib extension, one operating along each wingwall of the drydock; and use of mobile equipment described under Ref No. 38.			West side: two electrically operated, mast-and-boom derricks, each with two 30-foot booms for handling hose.	
RAILWAY CONNECTIONS	None.			None.			None.	
HIGHWAY CONNECTIONS	Via plant road, various widths, from 20th Street, paved, 20 feet wide and Third Street, paved, 60 feet wide.			Via plant road, various widths, from 20th Street, paved, 20 feet wide and Third Street, paved, 60 feet wide.			Via roadway, various widths, from foot of 20th or 22d Streets, 20 and 50 feet wide, and Third Street, 60 feet wide, all paved.	
WATER SUPPLY (For Vessels)	Through 4-inch line with 2-inch connections.			Through 4-inch line with 2-inch connections.			Through 4-inch line with 2-inch connections.	
ELECTRIC CURRENT (For Vessels)	A.C., 120/208/440 volts; D.C., 250 volts.			A.C., 220/440 volts; D.C., 250 volts.			A.C., 110/220/440 volts.	
FIRE PROTECTION (Other Than City)	Emergency response team, hydrants, hose, hand extinguishers, chemical carts, and security patrol.			Emergency response team, hydrants, hose, hand extinguishers, chemical carts, and security patrol.			Hydrants, hose, 8-inch line, hand extinguishers, and security patrol.	
REMARKS	At time of survey (September 1989) pier was in poor condition and would need repairs prior to being activated. Pier can be equipped with telephone connections and service lines for compressed air, water, electricity, steam, acetylene gas, and oxygen.			Floating Drydock No. 2, lifting capacity 65,000 long tons (Navy Certified to 59,000 long tons), is moored end-to face of platform which has 92- by 64-foot recess for inner apron of drydock and access gangway. Platform and drydock are equipped with telephone connections and service lines for compressed air, water, electricity, steam, acetylene gas, and oxygen.			A 13-acre, concrete-surfaced open storage area in rear has capacity for approximately 3,500 automobiles. One 16- becoming 20-inch pipeline with three 8-inch wharf connections extends to 2 steel storage tanks, total capacity 404,000 barrels; and one 12-inch pipeline with two 8-inch connections extends to a 120,000-barrel diesel fuel tank. Tanks are located at Potrero Power Plant at rear. In addition, one 2-inch steam, one 2-inch oily water, and one 3-inch steam condensate pipelines serve pier. A floating oil spill containment boom is available.	

CORPS OF ENGINEERS PORT CODE NO.	92202 Dock Code No. 600			82202 Dock Code No. 6
REFERENCE NUMBER ON MAP NO.	43			44
NAME	San Francisco Port Commission, Container Terminal North (Pier No. 80).			San Francisco Port Commission No. 84.
LOCATION ON WATERFRONT	San Francisco Bay, foot of Army Street. 501 Army Street			North side of Islias Creek, f Indiana Street extended.
OWNED BY	San Francisco Port Commission.			San Francisco Port Commission.
OPERATED BY	California Stevedore and Ballast Co.			Not operated.
PURPOSE FOR WHICH USED	Receipt and shipment of conventional, containerized, and roll-on roll-off general cargo, and heavy lift items in foreign and domestic trade.			Not used.
TYPE OF CONSTRUCTION	Concrete pile, asphalt-surfaced, concrete-decked wharf, fronting concrete panel cut-off wall with asphalt-surfaced solid fill on concrete relieving platform supported by timber piles; fronted by timber fender system.			Timber pile, timber-decked, o wharf with two 70- by 20-foot approaches; one timber mooring dolphin in line with face on side.
DESCRIPTION	Lower side	Face	Upper side	Face
Dimensions (Feet)	1,138	1,296	2,657	430 by 30
Depth Alongside at MLW Do.	40	40	40	30
Breasting Distance Do.	1,138	1,296	2,657	430
Total Berthing Space Do.	1,138	1,296	2,657	575 w/dolphins.
Width of Apron Do.	50 and open.	Open.	50 and open.	Open.
Height of Deck at MLW Do.	13			10
Load Capacity (Lbs. per Sq. Ft.)	1,000			300
Lighted or Unlighted	Lighted.			Lighted.
TRANSIT SHEDS Number and Description	Two - steel frame, clear span, metal-covered over concrete base wall; concrete floors.			None.
	Shed A		Shed D	
Length and Width (Feet)	1,000 by 225		750 by 225	
Height Inside Do.	24		24	
Floor Area for Cargo (Sq. Ft.)	225,000 gross		168,000 gross	
Load Capacity (Lbs. per Sq. Ft.)	1,000		1,000	
Cargo Doors	Shipside and ends: 17 @ 22x20; 3 @ 30x24; rear: 17 @ 18x18; 2 @ 30x24.		Shipside and ends: 13 @ 22x20; 4 @ 30x24; 1 @ 18x18; rear: 13 @ 18x18 2 @ 30x24.	
MECHANICAL HANDLING FACILITIES	Four diesel-electric, traveling, container-handling cranes, each with hinged boom and an operating rate of approximately 25 containers per hour:			Two unloading towers on wharf not in use at time of survey.

No.	Capacity (l. tons)	Outreach (fenderline)	Backreach (feet)	Boom Clearance (ft. above MHW)	Remarks
2	40	125 feet	50	110	Serves south side only
1	40	110 "	30	91.6	Serves all berths
1	30*	110 "	30	87	"

* (convertible to 40 long tons).

In addition, one 80-ton diesel, mobile crane with 150-foot boom; several diesel, container-handling toplift and forklift trucks, including five 35-, two 26-, two 20- and four 15-ton capacity.

RAILWAY CONNECTIONS	Port Railroads, Inc.: Two surface tracks on lower apron, two along face, two connecting surface tracks on upper apron, and one platform-level track along rear of each shed provide on-wharf intermodal transfer, and connect with 36 acre, Intermodal Container Transfer Facility (ICTF) at rear of terminal, and tracks of Southern Pacific Transportation Company, Union Pacific Railroad, and Atchison, Topeka, and Santa Fe Railroad. (See Remarks.)	None.
HIGHWAY CONNECTIONS	Via Army Street, paved, 65 feet wide.	Via Indiana Street, part asphal surfaced, 40 feet wide or via road, paved, various widths, f Army Street, 60 feet wide.
WATER SUPPLY (For Vessels)	Through 12-inch line with 2 1/2-inch connections.	None.
ELECTRIC CURRENT (For Vessels)	A.C., 220/480 volts.	None.
FIRE PROTECTION (Other Than City)	Hand extinguishers and security patrol.	None.
REMARKS	Terminal occupies 69 acres and has container capacity of 5,200 TEU's stacked 3 high, including 273 at 220-volt, and 36 at 480-volt outlets for refrigerated containers. Railway Connections (Cont'd): The ICTF has 2 loading/unloading tracks separated by 105 foot wide paved area, with capacity of 42 standard or 15 double-stack cars, 3 tracks for storage and/or by-pass, parking for 200 45-foot container chassis, and throughput of 105 cars (420 TEU) in 8 hours. Plans called for increase in area to 56 acres and doubling throughput capacity. San Francisco Port Commission has dredged and maintains 42-foot-deep (MLLW) approach channels serving terminal and Container Terminal South (Piers Nos. 94-96) P.W.D. Ref. No. 48.	-

OF ENGINEERS PORT CODE NO.	82202 Dock Code No. 654	82202 Dock Code No. 671	82202 Dock Code No. 683	
ENCE NUMBER ON MAP NO.	45	46	47	
	San Francisco Port Commission Pier No. 90B.	San Francisco Port Commission Pier No. 90, Port of San Francisco Grain Terminal.	San Francisco Port Commission Pier No. 92.	
ATION ON WATERFRONT	South side of Islais Creek, below Third Street Bridge.	South side of Islais Creek, approximately 900 feet below Third Street Bridge.	South side of Islais Creek at entrance.	
ED BY	San Francisco Port Commission.	San Francisco Port Commission.	San Francisco Port Commission.	
ATED BY	San Francisco Port Commission.	Continental Grain Co.	Baker Commodities, Inc.; and California Stevedore and Ballast Co.	
OSE FOR WHICH USED	Occasional mooring of miscellaneous vessels.	Shipment of grain.	Shipment of tallow and cottonseed oil; receipt of fish meal.	
E OF CONSTRUCTION	Timber pile, asphalt-surfaced, timber-decked wharf.	Timber pile, asphalt-surfaced, timber-decked wharf.	Concrete-jacketed, timber pile, concrete-decked wharf with asphalt-surfaced, timber pile, timber-decked extension.	
CRIPTION	Face	Face	Face	East side
ensions (Feet)	650	560	166+702	100
pth Alongside at MLLW Do.	30	40	35	-
ooting Distance Do.	650	560	166 + 702	-
tal Berthing Space Do.	1,210 (See Remarks.)	1,210 (See Remarks.)	166 + 702	-
dth of Apron Do.	Open.	560	33 and open.	
ight of Deck at MLLW Do.	12	12	12	
ad Capacity (Lbs. per Sq. Ft.)	300	250	500	
ghted or Unlighted	Lighted.	Lighted.	Lighted.	
ANSIT SHEDS mber and Description	None.	None.	One - irregularly shaped, steel frame, metal covered; concrete floor.	
ngth and Width (Feet)			398x168 to 3	
ight Inside Do.			28 and 18	
or Area for Cargo (Sq. Ft.)			56,000 gross.	
ad Capacity (Lbs. per Sq. Ft.)			500	
rgo Doors			Shipside: six 14 by 14; three 16 by 14; west side: three 16 by 14; south side: nine 12 by 10.	
CHANICAL HANDLING FACILITIES	Pacific Gas and Electric Co.: One blanked, 12-inch pipeline with 6-inch connection extends from face to 8 steel storage tanks at the Hunters Point Power Plant located approximately 3/4 mile south, total capacity 510,000 barrels.	Grain gallery extends full length of wharf along rear of face with 6 vessel-loading spouts, combined loading rate 40,000 bushels per hour.	California Stevedore and Ballast Co.: one 82-ton, diesel, mobile crane with 110-foot boom, equipped with 11- and 8-cubic yard clamshell buckets unloads fish meal into one of two hoppers on apron, one with 30-, and one with 24-inch, conveyor belt extending to transit shed, total capacity approximately 10,000 tons. One 2 1/2 cubic yard, diesel, mobile front end loader.	
ILWAY CONNECTIONS	None.	Port Railroads, Inc.: Three surface tracks serving 3 hopper car receiving pits, a boxcar dumper, and car-loading spout in car shed located between elevator buildings connect with Southern Pacific Transportation Co., Atchison, Topeka and Santa Fe Railroad, and Union Pacific Railroad.	Port Railroads, Inc.: Two surface tracks along face, one platform-level track in rear of transit shed, and one surface track serving 3 carloading spouts, connect with Southern Pacific Transportation Co. and Atchison, Topeka and Santa Fe and Union Pacific Railroads.	
HWAY CONNECTIONS	Via Third Street, paved, 85 feet wide or from Amador Street, paved, 30 feet wide.	Via Amador Street, paved, 30 feet wide, from Cargo Way and Third Street, paved, 30 feet wide.	Via Amador Street, paved, 34 feet wide, from Cargo Way and Third Street, paved, 80 feet wide.	
TER SUPPLY (For Vessels)	None.	Through 4-inch line with 2-inch connections.	Through 4-inch line with 2-inch connections.	
ECTRIC CURRENT (For Vessels)	None.	A.C., 110/440 volts.	A.C., 120/240 volts.	
RE PROTECTION (Other Than City)	None.	Hand extinguishers.	Hand extinguishers, hose, and security patrol.	
MARKS	At time of survey (1990), plans called for increasing area to 56 acres and doubling throughput capacity. San Francisco Port Commission has dredged and maintains 42-foot (MLLW) approach channels serving pier as well as Container Terminal South, Piers Nos. 94-96 (Ref. No. 48).	Grain elevator in rear consisting of 3 separate buildings having a total of 63 silos and 38 interstitial spaces, with a total storage capacity of 2,000,000 bushels. Reciprocal agreement with operator (Ref. No. 45) allows 1,210 feet of continuous berthing space.	Baker Commodities, Inc.: Two 8-inch steam-traced pipelines extend from wharf to 10 heated, steel, tallow storage tanks at terminal in rear, total capacity 10,000 long tons. Royal Tallow Division of Darling-Delaware, Inc.: Pipelines extend to tanks at terminal of Baker Commodities, Inc., from 6 tallow storage tanks, total capacity 6,000 long tons.	

CORPS OF ENGINEERS PORT CODE NO.	82202 Dock Code No. 788	82202 Dock Code No.
REFERENCE NUMBER ON MAP NO.	48	49
NAME	San Francisco Port Commission, Container Terminal South (Pier Nos. 94-96).	San Francisco Port Commiss Container Terminal, South Mooring.
LOCATION ON WATERFRONT	San Francisco Bay between Islais Creek and India Basin.	San Francisco Bay, north s India Basin.
OWNED BY	San Francisco Port Commission.	San Francisco Port Commissi
OPERATED BY	Stevedoring Services of America.	Stevedoring Services of Am
PURPOSE FOR WHICH USED	Receipt and shipment of conventional, containerized and roll-on, roll-off general cargo and heavy lift items in foreign and domestic trade.	Occasional mooring of small and barges.
TYPE OF CONSTRUCTION	Concrete pile, concrete-subdecked wharf supporting asphalt-surfaced solid fill.	Steel sheet pile bulkhead w asphalt-surfaced solid fill
DESCRIPTION	Face	Face
Dimensions (Feet)	2,456	78+1,500
Depth Alongside at MLW Do.	40	14
Berthing Distance Do.	2,456	1,500
Total Berthing Space Do.	2,456	1,500
Width of Apron Do.	Open.	25 and open.
Height of Deck at MLW Do.	14	14
Load Capacity (Lbs. per Sq. Ft.)	800	500
Lighted or Unlighted	Lighted.	Lighted.
TRANSIT SHEDS Number and Description	None. (See Remarks.)	One steel frame, metal cover concrete base wall; asphalt
Length and Width (Feet)		855 by 192-3
Height Inside Do.		24-38
Floor Area for Cargo (Sq. Ft.)		105,600 net.
Load Capacity (Lbs. per Sq. Ft.)		500
Cargo Doors		Shipside: thirteen, 10 by 1 Rear: nine, 10 by 10 and tw 24-25. Ends: two, 30 by 20 30 by 10.
MECHANICAL HANDLING FACILITIES	Four electric, traveling, container-handling cranes, each with hinged boom and an operating rate of approximately 25 containers per hour: No. 2 — Capacity (long tons) 40 — Outreach (fenderline) 105 feet — Backreach (feet) 30 — Boom Clearance (above MHW) 103.5 feet No. 2 — Capacity (long tons) 30* — Outreach (fenderline) 105 " — Backreach (feet) 30 — Boom Clearance (above MHW) 88.5 " * (convertible to 40 long tons). In addition, use of 80-ton diesel, mobile crane with 150-foot boom from Container Terminal North (F.M.D Ref. 43); and several diesel, container-handling toplift and forklift trucks, including ten 35-, four 25-, two 12-ton and others 2- to 9-ton capacity.	Five unused, 3-ton, overhead electric cranes equipped wit the 3-way adjustable forks a control cab designed to load unload palletized cargo from Two unused, 50-ton, electri bridge cranes travel on overh rails from open area in rear inner end of face on 76-foot parallel, concrete piers spac feet apart. The bridge crane used in tandem for heavy lift
RAILWAY CONNECTIONS	Port Railroads, Inc.: Two surface tracks extending to rear of face join additional terminal trackage and 5-track storage yard in rear; connect with tracks of Southern Pacific Transportation Company; Atchison, Topeka and Santa Fe Railroad; and Union Pacific Railroad. (See Remarks.)	Port Railroads, Inc.: One 400 platform-level track at rear transit shed joins additional terminal trackage; connect wi tracks of Southern Pacific Ra Atchison, Topeka, and Santa F Railroad; and Union Pacific Railroad.
HIGHWAY CONNECTIONS	Via Cargo Way, paved, 24 feet wide, from Third Street, paved, 80 feet wide.	Via Cargo Way, paved, 24 feet from Third Street, paved, 80 wide.
WATER SUPPLY (For Vessels)	Through 12-inch line with 2 1/2-inch connections.	None.
ELECTRIC CURRENT (For Vessels)	A.C., 240/480 volts.	None.
FIRE PROTECTION (Other Than City)	Hand extinguishers, hose, and security patrol.	Hand extinguishers, hose, and security patrol.
REMARKS	Trackage permits unit train access to the terminal, and connects with Intermodal Container Transfer Facility (ICTF) described under Ref. No. 43. A 76-acre, paved, container storage area, having capacity for 12,500 TEU's, stacked two and three-high including 138 at 240 volt, and 32 at 480 volt outlets for refrigerated cargo containers. Terminal is served by the Container Freight Station described under Ref. No. 49; and, at time of survey, had an additional 75 acres available for expansion.	Canopy extends 75 feet from t shed covering apron and loadi area. Adjacent lighted storage formed by an angular, timber timber-decked, wave absorber extending from, thence paralle face, has storage capacity for barges. At time of survey pl called for selling the five 3- cranes and removing the 75-foo canopy over the apron and berth Transit shed used as Container Freight Station has 54 truck l stations.

CORPS OF ENGINEERS PORT CODE NO.	82202 Dock Code No. 783			82202 Dock Code No. 784	
REFERENCE NUMBER ON MAP NO.	50			51	
NAME	Anderson and Cristofani Pier.			Allemand Brothers Boat Repair Pier.	
LOCATION ON WATERFRONT	Near intersection of Innes Avenue and Griffith Street.			Near intersection of Innes Avenue and Griffith Street.	
OWNED BY	Anderson and Cristofani.			Ferma Corporation and Anderson and Cristofani.	
OPERATED BY	Anderson and Cristofani.			Allemand Brothers Boat Repair.	
PURPOSE FOR WHICH USED	Mooring vessels for repair.			Mooring vessels for repair.	
TYPE OF CONSTRUCTION	Platic foam-filled, wood floats extending from face of timber pile, timber-decked pier approach.			Plastic-filled, angular timber floats anchored by timber piles extending from shore.	
DESCRIPTION		Float	Pier	Floats	
Dimensions (Feet)		120 by 12	120 by 16	200 + 80 by 10	
Depth Alongside at MLW Do.		2-3	2-3	4 - 0	
Berthing Distance Do.		120 + 120	120 + 120	200 + 280	
Total Berthing Space Do.		240	240	280 + 280	
Width of Apron Do.		Open.	-	Open.	
Height of Deck at MLW Do.		-	8	-	
Load Capacity (Lbs. per Sq. Ft.)		200		-	
Lighted or Unlighted		Lighted.		Lighted.	
MECHANICAL HANDLING FACILITIES	One 18-ton, diesel, mobile crane with 80-foot, telescopic boom; and one 4-ton gasoline, forklift truck. Additional rental equipment is available.			One 40-ton, diesel, crawler crane, with 80-foot boom; and one 5-ton, gasoline, mobile crane, with 18-foot boom.	
RAILWAY CONNECTIONS	None.			None.	
HIGHWAY CONNECTIONS	Via Innes Avenue, paved, 60 feet wide, from Hunters Point Boulevard.			Via Innes Avenue, paved, 60 feet wide, from Hunters Point Boulevard.	
WATER SUPPLY (For Vessels)	Through 1 1/2-inch line.			Through 1 1/2-inch line.	
ELECTRIC CURRENT (For Vessels)	A.C., 110/220 volts.			A.C., 110/220/440 volts.	
FIRE PROTECTION (Other Than City)	Pump, hydrant, hand extinguishers, and security patrol.			Pump, hydrant, hand extinguishers, and security patrol.	
REMARKS	Two marine railways are located adjacent to lower side and one adjacent to upper side of pier. Marine repair plant is located in rear. Compressed air line serves pier.			Two 50-ton marine railways are located adjacent to inner end of lower side of pier.	

OIL HANDLING AND BUNKERING

Two of the waterfront facilities described in this report are equipped to receive and/or ship petroleum products. The Pacific Gas and Electric Co. receives fuel oil for consumption at the Potrero Power Plant at the San Francisco Port Commission's Pier No. 70 (P.W.D. Ref. No. 42). The Potrero Plant has three storage tanks with a total capacity of 524,000 barrels. Tugs, fishing vessels, and other types of small craft may obtain fuel and marine lubricants at P.W.D. Ref. No. 4 located at the foot of Hyde Street, adjacent to Fisherman's Wharf. H & H Environmental Services receives contaminated oil, slops and waste water at Pier 48A (P.W.D. Ref. No. 34). Their five storage tanks have a total capacity of 23,800 barrels.

Large oceangoing vessels usually are bunkered at berth by tank barges based at Alameda and Richmond, California. These barges, together with their capacities and sizes, are listed separately in the tabulation of Floating Equipment on pages 53 and 54. Tank storage at recreational craft service stations is not included.

WAREHOUSES

In the port area, 8 companies operate public storage warehouses having a total of 556,000 square feet of dry storage space, including 110,000 square feet of bonded space; 450,535 cubic feet of cooler space; and 3,366,617 cubic feet of freezer space. All but one of the warehouses have rail connections, and all are easily accessible to arterial highways. Diversified handling equipment is maintained by the operators, and special services are provided, including packing and crating, forwarding, pool car distribution, carloading, weighing, stamping, and marking.

The summary below lists the operators and gives the storage capacity of the dry and cold storage facilities, which are more fully described under individual reference numbers in the table of Storage Warehouses, beginning on page 41. The reference numbers identify warehouse locations on the Port Facilities map for San Francisco.

DRY AND COLD STORAGE WAREHOUSES

S.W. REF. NO.	OPERATOR	DRY (SQ. FT.)	COLD (CU. FT.)
1	Foreign Trade Services, Inc.....	127,700	
2	C.J. Figone Cold Storage.....	100,000 (B)	5,000 (C)
3	F.J. Burns Warehouse.....		800,000 (F)
4	Consolidated De Pue Corp.....	44,000	
5	Growers Refrigeration Co., Inc...	30,000	173,000 (C)
6	Americold Corp.....	120,000	300,000 (F)
			258,000 (C)
7	United Cold Storage.....	10,000 (B)	2,029,000 (F)
			14,535 (C)
8	Christina Warehouse Co., Inc.....	125,000	237,617 (F)
	TOTAL.....	556,700	3,817,152

(B) Bonded general storage. (C) Cooler. (F) Freezer.

STORAGE WAREHOUSES

WAREHOUSE REF. NO.	1	2
OPERATOR AND ADDRESS	Foreign Trade Services, Inc. Pier 23 San Francisco, CA 94111	C.J. Figone Cold Storage 420 17th Street San Francisco, CA 94107
LOCATION	Transit sheds, Piers Nos. 19 and 23 (P.W.D. Ref. Nos. 18 and 19).	Same as above.
KIND OF STORAGE	Dry.	Cooler and Freezer.
COMMODITIES USUALLY STORED	General merchandise.	Perishable food commodities.
DESCRIPTION Type of Construction Number of Floors Clear Height for Storage (Feet): First Floor..... Other Floors..... Load Capacity (Lbs/Sq.Ft.): First Floor..... Other Floors.....	Two: steel frame, concrete walls; asphalt-surfaced, timber pile, concrete-decked pier. One. 30 - 500, Pier No. 19; 600, Pier No. 23 -	Steel frame, concrete walls; concrete floor. One. 25 - Unlimited -
AREAS FOR PUBLIC STORAGE:	DRY STORAGE / COLD STORAGE	DRY STORAGE / COLD STORAGE
General Storage.....(Sq.Ft.)	127,700 / -	- / -
U.S. Customs Bonded...(Sq.Ft.)	100,000 / -	- / -
Cooler Space.....(Cu.Ft.)	- / -	- / 5,000
Freezer Space.....(Cu.Ft.)	- / -	- / 800,000
Convertible Space.....(Cu.Ft.)	- / -	- / -
RAILWAY CONNECTIONS	Port Railroads, Inc.: one surface track along each side of each warehouse.	One carfloor-level track alongside building connects with tracks of Atchison, Topeka, and Santa Fe Railroad.
TRUCKLOADING STATIONS	Trucks have access to interior of each warehouse.	Six.
HANDLING EQUIPMENT	Forklift equipment available as required.	Five 2-ton forklift trucks; four electric, and one LP-gas operated.
FIRE PROTECTION	Automatic fire detection, sprinkler system, and watchmen.	Sprinkler system.
REMARKS	A 1.4 acre, open storage area is available within the Foreign Trade Zone. Container service is available.	Direct ammonia expansion system, temperature 5°F in freezer, and 32°F to 40°F in cooler. USDA Import Inspection Station on I70 highway.

STORAGE WAREHOUSES

WAREHOUSE REF. NO.	3	4
OPERATOR AND ADDRESS	F. J. Burns Warehouse 640 Army Street San Francisco, CA 94124	Consolidated De Pue Corp. 200 Toland Street San Francisco, CA 94124
LOCATION	Adjacent to Container Terminal North (Pier 80, P.W.D. Ref. No. 43).	Toland Street at Galvez Avenue.
KIND OF STORAGE	Dry.	Dry.
COMMODITIES USUALLY STORED	General merchandise.	General merchandise and food commodities.
DESCRIPTION Type of Construction Number of Floors Clear Height for Storage (Feet): First Floor..... Other Floors..... Load Capacity (Lbs/Sq.Ft.): First Floor..... Other Floors.....	Steel frame, metal-covered; concrete floor. One. 30 - Unlimited. -	Masonry with concrete floor. One. 20 - - -
AREAS FOR PUBLIC STORAGE: General Storage.....(Sq.Ft.) U.S. Customs Bonded...(Sq.Ft.) Cooler Space.....(Cu.Ft.) Freezer Space.....(Cu.Ft.) Convertible Space.....(Cu.Ft.)	DRY STORAGE / COLD STORAGE 44,000 / - Available / - - / - - / - - / -	DRY STORAGE / COLD STORAGE 30,000 / - - / - - / - - / - - / -
RAILWAY CONNECTIONS	One 8-car capacity 6 door, platform-level track along north side connects with Union Pacific Railroad.	One 2-car capacity, platform-level track connects with tracks of Southern Pacific Transportation Company.
TRUCKLOADING STATIONS	Twenty-two at platform, 2 low bed.	6 trucks at 2 platforms.
HANDLING EQUIPMENT	Sixteen forklift trucks, and boom truck.	Four LP-gas and one electric 2 1/2-ton forklift trucks.
FIRE PROTECTION	Automatic fire detection and sprinkler system, and hand extinguishers.	Automatic fire detection and sprinkler system, and hand extinguishers.
REMARKS	A 0.6 acre, fenced open storage area is located adjacent to warehouse.	-

STORAGE WAREHOUSES

WAREHOUSE REF. NO.	5	6
OPERATOR AND ADDRESS	Growers Refrigeration Co., Inc. 2050 Galvez Avenue. San Francisco, CA 94124	Americold Corporation. 1600 Donner Avenue. San Francisco, CA. 94124
LOCATION	Same as above.	Third Street and Conner Avenue.
KIND OF STORAGE	Dry and cooler.	Dry, cooler and freezer.
COMMODITIES USUALLY STORED	Perishable food commodities, and general merchandise.	Perishable food commodities.
DESCRIPTION Type of Construction Number of Floors Clear Height for Storage (Feet): First Floor..... Other Floors..... Load Capacity (Lbs/Sq.Ft.): First Floor..... Other Floors.....	Concrete walls and floor. One. 20 - - -	Tilt-up concrete walls, concrete floor. One. 20 - - -
AREAS FOR PUBLIC STORAGE:	DRY STORAGE / COLD STORAGE	DRY STORAGE / COLD STORAGE
General Storage.....(Sq.Ft.)	Available / -	120,000 / -
U.S. Customs Bonded...(Sq.Ft.)	- / -	10,000 / -
Cooler Space.....(Cu.Ft.)	- / 173,000	- / 258,000
Freezer Space.....(Cu.Ft.)	- / 300,000	- / 2,029,000
Convertible Space.....(Cu.Ft.)	- / -	- / -
RAILWAY CONNECTIONS	None.	One 2-car capacity, carfloor-level track connects with tracks of Southern Pacific Transportation Co.
TRUCKLOADING STATIONS	3 refrigerated trucks, 3 semi-trailers.	36 at platform.
HANDLING EQUIPMENT	Six 1 1/4-ton fork lift trucks.	Sixteen 2-ton forklift trucks; twelve electric power jacks.
FIRE PROTECTION	Fire station adjacent, and hand extinguishers.	Automatic fire detection and dry pipe sprinkler system.
REMARKS	Company-owned refrigerated truck service, strapping, stenciling and catch weight services available.	Ammonia refrigeration system, temperature in freezer 10°F, and 29°F to 45°F in cooler. Services include blast freezing, USDA import inspection, container services and freight consolidation.

STORAGE WAREHOUSES

WAREHOUSE REF. NO.	7	8
OPERATOR AND ADDRESS	United Cold Storage 233 East Grand Avenue South San Francisco, CA 94080-4884	Christina Warehouse Co., Inc. 1045 N. 10th St. San Jose, CA 95112
BUILDING DESIGNATION/S	-	-
LOCATION	Same as above.	Same as above.
KIND OF STORAGE	Cooler and freezer.	Dry.
COMMODITIES USUALLY STORED	Perishable food commodities, and industrial and scientific materials.	General merchandise.
DESCRIPTION Type of Construction	Part concrete, part masonry walls; timber, stucco and tile walls; concrete floor.	Concrete frame, walls and floor.
Number of Floors	Two.	One.
Clear Height for Storage (Feet): First Floor..... Other Floors.....	16-27 8	22-24 -
Load Capacity (Lbs/Sq.Ft.): First Floor..... Other Floors.....	640 160	- -
AREAS FOR PUBLIC STORAGE:	DRY STORAGE / COLD STORAGE	DRY STORAGE / COLD STORAGE
General Storage.....(Sq.Ft.)	- / -	125,000 / -
U.S. Customs Bonded...(Sq.Ft.)	- / -	- / -
Cooler Space.....(Cu.Ft.)	- / 14,535	- / -
Freezer Space.....(Cu.Ft.)	- / 237,617	- / -
Convertible Space.....(Cu.Ft.)	- / -	- / -
RAILWAY CONNECTIONS	None.	One 8-car capacity, carfloor-level track connects with tracks of Southern Pacific Transportation Company.
TRUCKLOADING STATIONS	5	6
HANDLING EQUIPMENT	One 1 1/4-ton elevator; four 1 1/4-ton, electric, forklift trucks.	Several 3-ton LP-gas and electric forklift trucks.
FIRE PROTECTION	Hand extinguishers.	Automatic fire detection and sprinkler systems.
REMARKS	Two-stage ammonia and freon refrigeration system, temperature ranges 0°F in freezer, 35°F to 40°F in cooler.	-

GRAIN ELEVATOR

Continental Grain Co. operates a waterside grain elevator at the rear of Pier No. 90, Port of San Francisco Grain Terminal (P.W.D. Ref. No. 46). The elevator, owned by the San Francisco Port Commission, consists of three separate buildings having a total of 63 concrete silos with 38 interstices and a total capacity of 2,000,000 bushels. The elevator is equipped to receive grain by rail and truck and to ship grain by rail, truck, and vessel. An overhead gallery equipped with two 30-inch drag conveyors and six vessel-loading spouts extends 350 feet along the wharf and connects with the elevator at rear. The vessel-loading spouts are normally operated in pairs at a maximum combined loading rate of 24,000 bushels per hour. A reciprocal agreement with the operator of Pier No. 90B (P.W.D. Ref. No. 45) allows 1,210 feet of continuous berthing space with 30- to 40-foot depths of water alongside at mean lower low water.

Grain is received by rail at three hopper car pits and one boxcar dumper inside car shed at rear of elevator. Hopper cars are unloaded at a rate of 30 cars per hour. Grain received by truck is unloaded into two receiving pits at a combined rate of six trucks per hour. One loading spout is available for loading rail cars, and two for loading trucks. Primarily, the elevator is used for receiving grain by railroad hopper car and truck, and shipment by vessel. Port Railroads, Inc. tracks serving elevator and nearby 200 car capacity storage yard are serviced by the Southern Pacific Transportation Co.

OPEN STORAGE

In addition to the long- and short-term, covered storage facilities for waterborne cargo, there are seven locations providing open storage areas for containerized and/or conventional general cargo. All are owned by the San Francisco Port Commission, and are served by railroad tracks and improved streets or roadways. These storage areas are shown in the Summary of General Cargo on page 21.

Other operators with waterfront facilities at the Port of San Francisco have open storage areas to meet their own operational requirements and usually are not available for public use.

HOISTING EQUIPMENT - ASHORE AND AFLOAT

Conventional general cargo at San Francisco is usually handled to and from vessels by ships' tackle. However, the San Francisco Port Commission has several container-handling and mobile cranes for making heavy lifts of up to 80 tons. This equipment is described on the following page. Additional lifting capacity is available from crane rental companies serving the San Francisco Bay area.

Hoisting Equipment - Ashore

San Francisco Port Commission

Container Terminal North, Pier No. 80 (P.W.D. Ref. No. 43)

Three 40-, and one 30-long ton (convertible to 40-long ton), diesel-electric, traveling, container-handling cranes, two with 125-, and two with 110-foot outboard reach, and two with 50-, and two with 30-foot back reach, respectively.

One 80-ton, diesel, mobile crane with 150-foot boom.

Container Terminal South, Pier Nos. 94-96, (P.W.D. Ref. No. 48)

Two 40- and two 30-long ton (convertible to 40-long ton), electric, traveling, container-handling cranes, each with 105-foot outboard reach; two with 50-, and two with 30-foot back reach.

Floating cranes, normally stationed in Alameda, California, with capacities of up to 350 tons, are available for making heavy lifts at shipside. This equipment serves the entire San Francisco Bay area and is described below. Cranes, derricks, and special-handling equipment at other waterfront facilities within the port area generally are for the sole use of the operating companies and are described under Mechanical Handling Facilities in the preceding table of Piers, Wharves, and Docks.

Hoisting Equipment - Afloat

Smith-Rice Company, 2199 Clement Avenue, Alameda, CA 94501

Derrick Barge No. 5 - 350-ton diesel, revolving crane mounted on a 225- by 80-foot barge with 4-foot draft.

Derrick Barge No. 4 - 100-ton diesel, revolving crane mounted on a 130- by 50-foot barge with 4-foot draft.

Derrick Barge No. 24 - 100-ton diesel, revolving crane mounted on a 150- by 52-foot barge with 4-foot draft.

Dredge Super Scoop - 180-ton, diesel, revolving crane mounted on a 175- by 70-foot barge with 5-foot draft.

MARINE REPAIR PLANTS AND DRYDOCKING EQUIPMENT

Five plants operate waterfront facilities at the port for the construction, repair, and conversion of oceangoing vessels, tugs, barges, and other floating vessels and equipment. One of the plants operates drydocking facilities for large vessels, and two operate haul-out facilities for smaller craft.

Two floating drydocks, and five marine railways are located at various waterfront marine repair plants. The lifting capacities of the floating drydocks are 22,200- and 65,000-long tons; and the haul-out capacities of the marine railways range from 50 to 350 tons.

Detailed descriptions of these facilities are given in the tabulation on pages 49 through 52.

FLOATING EQUIPMENT

Eight companies operate tugs with ratings up to 7200 horsepower for docking, undocking, shifting and towing vessels in the Port of San Francisco, as well as the entire San Francisco Bay area. Two companies are based on the San Francisco waterfront and the others in Oakland, Alameda, and Richmond, California.

One company in Alameda, and three companies in Richmond provide bunkering barges for making deliveries of bunker fuel, diesel fuel, lubricating oils, and gasoline to vessels at berth or at anchor in the San Francisco Bay area. These barges have cargo-carrying capacities ranging up to 25,000 barrels. The table on pages 53 and 54 describes in detail the San Francisco Bay area floating equipment.

Additional information on floating equipment can be obtained from "Waterborne Transportation Lines of the United States" published by the United States Army Corps of Engineers. This report describes the American flag vessels engaged in the carriage of freight and passengers, listing the net registered tonnage, length, width, draft, horsepower, carrying capacity, and other details of construction. It also describes the operations of each vessel operated, listing the waterways used and the localities served. Copies of this publication are for sale by the District Engineer, U. S. Army Engineer District, New Orleans, ATTN: CELMN-ED-S, P.O. Box 60267, New Orleans, LA 70160, telephone number (504) 862-1404.

RAIL LINES

The Port of San Francisco is served directly by three line-haul railroads and one switching line: The Southern Pacific Transportation Company, The Union Pacific Railroad, and the Atchison, Topeka and Santa Fe Railway.

Port Railroads, Inc. is a switching line which serves all of the piers on the city's downtown waterfront from Fisherman's Wharf to China Basin, and the industries and warehouses adjacent to the waterfront. Interchange connections are made by this line with the three line-haul railroads serving the port.

The Port of San Francisco offers wharfside intermodal transfer of containers between ship and rail at both the San Francisco Container Terminals North and South (P.W.D. Ref. Nos. 43 and 48, respectively), and has a dedicated Intermodal Container Transfer Facility (ICTF) located adjacent to Container Terminal South with direct access to both terminals. It occupies 36 acres with two loading/unloading tracks having a capacity for 42 standard intermodal railcars or 15 double-stack cars, with three additional tracks for car storage and engine by-pass. A 105-foot-wide paved area between the tracks for container handling equipment and two hundred 45-foot container chassis is available. At time of survey throughput capacity was 105 railcars (420 TEU) per eight hours, with plans to double the capacity with a 20 acre expansion of the terminal.

MARINE REPAIR PLANTS AND DRYDOCKING EQUIPMENT

REF. NO. OF NEAREST PIER	31-32	35-36
OPERATOR AND ADDRESS	Service Engineering Co., Inc. 178 Townsend Street San Francisco, CA 94107	Continental Maritime of San Francisco Pier 50-54 San Francisco, CA 94105
LOCATION OF PLANT	Plant at above address (Pier No. 38) and at Pier No. 36, between foot of Brannan and Townsend Streets.	Pier No. 50, foot of Mission Rock Street extended.
REPAIR SHOPS AND EQUIPMENT	Fabrication and machine shops at above address and fabrication shop and rigging loft; one 90-ton, diesel floating crane Derrick Barge 4; three 18-ton diesel mobile cranes; twelve forklift trucks up to 4-ton capacity; one 3-ton electric hoist in shop; portable welding and sandblasting equipment.	Machine, electric, pipe, paint, and fabrication shops; welding equipment; air compressors; sandblasting equipment; one 90-ton mobile crane with 200-foot boom; two 18-ton mobile cranes, each with 120-foot boom; twelve 2-ton forklift trucks.
NATURE OF WORK UNDERTAKEN	Above-waterline repairs to deep-draft vessels including plate work, rigging, machinery repair, welding, sandblasting, and painting.	Above-waterline repairs to deep-draft vessels, including plate work, and repairs to machinery and engines.
LARGEST SHAFTS PRODUCED	Lathes: 32-inch swing by 25-foot bed.	-
VESSEL CAPACITY AT PLANT	Two or three at pier; others at piers leased as needed.	Two at Pier No. 54; four at Pier No. 50.
REMARKS	Repair work done at plant, pier, and on board vessels at berth in San Francisco Bay area.	Repair work done at pier and on board vessels at berth in the San Francisco Bay area.

MARINE REPAIR PLANTS AND DRYDOCKING EQUIPMENT (Cont.)

REF. NO. OF NEAREST PIER	37-41	
OPERATOR AND ADDRESS	Southwest Marine of San Francisco, Inc. 20th and Illinois Streets San Francisco, CA 94119	
LOCATION OF PLANT	South side of Central Basin at foot of 19th Street extended.	
REPAIR SHOPS AND EQUIPMENT	Machine, copper, electric, joiner, paint, pipe, plate, and sheet metal shops; 30-foot boring mill; 1,100 ton- brake press; drawcut shaper; shipbuilding and launching ways; one 65,000- and one 22,200-ton floating drydocks; 8 gantry cranes with lifting capacities up to 60 tons; one 22 1/2- and one 15-ton diesel, mobile cranes.	
NATURE OF WORK UNDERTAKEN	Construction, conversion, and repairs of any nature to deep-draft vessels up to 65,000 tons; industrial fabricating and machine work.	
LARGEST SHAFTS PRODUCED	Lathes: 48-inch swing by 64-foot bed; 48-inch swing by 60-foot bed; and 60-inch swing by 34-foot bed.	
VESSEL CAPACITY AT PLANT	Eight to ten depending upon size.	
FLOATING DRYDOCKS	Drydock No. 1	Drydock No. 2
Type of construction	Steel, 1 section.	Steel, 1 section.
Dimensions (Feet)		
Length overall.....	584 + two 35-foot aprons	800 + two 50-foot aprons
Length on blocks.....	584	800
Width overall.....	128	186
Clear width of vessel.....	98	148
Maximum depth over blocks, dock submerged.....	27.75	33
Lifting capacity (long tons)	22,200	65,000
Largest vessel handled (Feet)	654 by 98	900 by 148 capacity
Date built/rebuilt	1942/-	1970/-
UTILITIES AVAILABLE	Water, steam, compressed air, acetylene gas, oxygen, A.C. 220/440/480 volts.	
REMARKS	Repair work done at shipyard and on board vessels at berth in San Francisco Bay area. Drydock No. 1 is moored along west side of Pier No. 4; pool depth 49 feet. Drydock No. 2 is moored end-to faces of two approach platforms; equipped with sewage eductors.	

MARINE REPAIR PLANTS AND DRYDOCKING EQUIPMENT (Cont.)

NEAREST P.W.D. REF. NO.	50
OPERATOR AND ADDRESS	Anderson and Cristofani Marine Ways 894 Innes Avenue San Francisco, CA 94124
LOCATION OF PLANT	West side of India Basin, near intersection of Innes Avenue and Griffith Street.
REPAIR SHOPS AND EQUIPMENT	Machine, carpenter, and paint shops; portable welding and sandblasting equipment; one 15-ton, diesel crawler crane: one 2-ton mobile hoist; one 15-, one 3 1/2-, and one 2-ton forklift trucks; one 500-, one 150-, and one 60-ton marine railways.
NATURE OF WORK UNDERTAKEN	Above- and below- waterline repairs to small steel, wooden, and fiberglass vessels up to capacity marine railways. engine repair, plate work, sandblasting, cleaning, and painting.
LARGEST SHAFTS PRODUCED	By subcontract.
VESSEL CAPACITY AT PLANT	One on each railway; up to 9 at piers depending upon size.
MARINE RAILWAY	

Type	Crandall.		
Dimensions (Feet):	No. 1	No. 2	No. 3
Length of cradle.....	80	80	40
Length on blocks.....	80	80	40
Clear width of cradle at top of keel blocks.....	40	26	18
Depth over keel blocks at MHW			
Forward.....	12	7	6
Aft.....	14	10	7
Hauling power (tons)	350	150	60
Largest vessel handled	156 by 24	110 by 24	70 by 24
Date built and/or rebuilt	-/1981	-/1970	-/1970
Utilities available	Water, compressed air, acetylene gas, steam, and A.C., 110/220/440 volts, D.C. 110/220 volts.		

REMARKS	-

MARINE REPAIR PLANTS AND DRYDOCKING EQUIPMENT (Cont.)

NEAREST P.W.D. REF. NO.	51
OPERATOR AND ADDRESS	Allemand Bros. Boat Repair Innes Avenue and Griffith Street San Francisco, CA 94124
LOCATION OF PLANT	West side of India Basin, near intersection of Innes Avenue and Griffith Street.
REPAIR SHOPS AND EQUIPMENT	Woodworking, welding, and small machine shops; one 40-ton, diesel crawler crane with 80-foot boom for hauling-out vessels; and one 5-ton, gasoline, mobile hoist; two 50-ton marine railways.
NATURE OF WORK UNDERTAKEN	Above- and below- waterline general repairs to small steel, wooden, and fiberglass vessels up to capacity of marine railways.
LARGEST SHAFTS PRODUCED	None.
VESSEL CAPACITY AT PLANT	One on each railway; approximately 15 in concrete-surfaced work area; several at pier depending on size.
MARINE RAILWAY	
Type	Crandall.
Dimensions (Feet):	
Length of cradle.....	No. 1: 44 (2 sections) / No. 2: 60 (2 sections)
Length on blocks.....	No. 1: 44 / No. 2: 60
Clear width of cradle at top of keel blocks.....	No. 1: 18 / No. 2: 18
Depth over keel blocks at MHW	
Forward.....	No. 1: 4 / No. 2: 4
Aft.....	No. 1: 6 / No. 2: 6
Hauling power (tons)	No. 1: 50 / No. 2: 50
Largest vessel handled	No. 1: 65 by 18 / No. 2: 65 by 18
Date built and/or rebuilt	No. 1: 1964 / No. 2: 1964
Utilities available	Water, compressed air, and A.C., 220 volts.
REMARKS	-

FLOATING EQUIPMENT
(Available to the Public)

(a) OPERATOR AND ADDRESS (b) BASE FROM WHICH OPERATED	NAME OR NUMBER	DIMENSIONS OVERALL LENGTH (FEET)	DIMENSIONS OVERALL WIDTH (FEET)	DRAFT UNDER LOAD (FEET)	HORSE-POWER	REMARKS
		DIESEL TUGS AND TOWBOATS				
SAN FRANCISCO						
(a) Bay and Delta Towing Co. Pier No. 15 San Francisco, CA 94111 (b) P.N.D. Ref. No. 20	Maggie	107	28	14	4,000	Towing, docking and undocking vessels in San Francisco Bay and tributaries. (1)
	Capt. Jack	85	24	13	4,000	
	Sonja V.	93	24	11.5	2,500	
	Domar Commander	95	26	12	2,100	
(a) Westar Marine Services Pier 46 San Francisco, CA 94107 (b) P.N.D. Ref. No. 33	Bearcat	72	24	7.5	1,000	do.
	Panther	65	17	9	1,000	
	Warrior	65	19.5	17.9	1,000	
OAKLAND (P.S. No. 31)						
(a) Harbor Tug & Barge Co., a division of Crowley Maritime Corp. 2900 Main Street Alameda, CA 94501	Sea Wolff	115.2	31.1	10.4	2,800	do.
	Point Thompson	96	30	12	2,500	
	Point Milne	96	30	12	2,500	
	Sea Duke	92	24.7	11.8	2,250	
	Sea Scout	92.4	24.7	11.8	2,250	
	Sea Lark	94	25	11.7	2,000	
	American River	64.2	26.1	6	1,000	
	Feather River	64.1	26.1	6	1,000	
	San Joaquin River	64.2	26.1	6	1,000	
(a) Seaway Transportation Co. 2900 Main Street Alameda, CA 94501	Southern Cross	87	28	13	2,000	do.
	Polaris	65	17.5	9	1,000	
(a) Oscar Niemeth Towing, Inc. 4001 7th Street P.O. Box 24848 Oakland, CA 94623	American Eagle	115	32	16	4,300	do.
	Silver Eagle	106.6	34	15	3,950	
	Spill Spoiler I	54	25	5.5	400	(Oil spill recovery catamarans.)
	Spill Spoiler II	54	25	5.5	400	
RICHMOND (P.S. No. 31)						
(a) American Navigation Co. 1312 Canal Boulevard Richmond, CA 94804	Hondo	99	30	9.7	2,500	Towing, docking and undocking vessels in San Francisco Bay and tributaries.
	Lobo	109.2	29.2	10.7	5,600	
	Kate	93.8	25	11.8	4,000	
	Capt. Eddie	95	26	14	4,000	
	Bobbie Jo	65	18	8	1,500	
	Raider	93.8	25	11.8	3,000	
	Paul Hastings(2)	120	30	13	7,200	
(a) Marin Tug & Barge Point Potrero Marine Terminal West Finger Pier Richmond, CA 94804	Marin Sunshine	75	22.6	9	2,000	do.
(a) Tweed Towing, Inc. 1453 Harbour Way South Richmond, CA 94804	Pacific Falcon	132	32	15	4,200	do.
	Pacific Pride	85	28	13.1	2,400	
	Pacific Eagle	98	27.6	10.6	2,000	

(1) Furnishes pneumatic fenders for tanker lightering.
(2) Under construction, to be completed in 1991.

FLOATING EQUIPMENT (Cont.)
(Available to the Public)

(a) OPERATOR AND ADDRESS (b) BASE FROM WHICH OPERATED	NAME OR NUMBER	DIMENSIONS OVERALL LENGTH (FEET)	DIMENSIONS OVERALL WIDTH (FEET)	DRAFT UNDER LOAD (FEET)	CAPACITY (BARRELS)	REMARKS
			TOWED TANK BARGES			
OAKLAND (F.S. No. 31)						
(a) Harbor Tug & Barge Co. 2900 Main Street Alameda, CA 94501	No. 5	195	40	10	11,600	
	No. 1	195	40	10	11,600	
	No. 51	260.1	50.1	13.3	24,200	
	Orange	254	54	13	26,000	
RICHMOND (F.S. No. 31)						
(a) Tweed Towing, Inc. 1453 Harbor Way South Richmond, CA 94804	Rosemarie	230	60	12.8	25,000	
(a) Marin Tug & Barge Point Potrero Marine Terminal West Finger Pier Richmond, CA 94804	Marin Mooner	210	52	15	22,000	Diesel fuel.
	Marin Dawn	236	50.4	14.4	24,000	Bunker fuel.
	Marin Mist	250	50	12.6	13,000	Bunker fuel.
					4,195	Diesel fuel.
	Marin Tenor	230	60	15.6	21,500	Bunker fuel.
					4,000	Diesel (convertible to bunker)
(a) Chevron U.S.A., Inc. P.O. Box 1272 Richmond, CA 94802	Oiler	225	44	14.7	18,000	Diesel fuel.

THE PORT OF REDWOOD CITY, CALIFORNIA

PORT AND HARBOR CONDITIONS

LOCATION AND GENERAL DESCRIPTION

Redwood City Harbor is located on the west side of San Francisco Bay near its southern end. The harbor, which consists of a channel and two turning basins, is situated within the confines of Redwood Creek approximately 20 miles south of the city of San Francisco. From within the community of Redwood City, approximately 4 miles inland from the mouth, Redwood Creek passes through a marshy stretch of land and enters San Francisco Bay at Redwood Point, 4 miles below the San Mateo-Hayward Bridge. At various points throughout its length, a number of sloughs enter Redwood Creek; the largest of these is Westpoint Slough, which enters near the mouth.

HARBOR AND CHANNEL IMPROVEMENTS BY THE UNITED STATES

The existing project, authorized by the River and Harbor Act of 25 June 1910 and modified by subsequent acts of which the latest are dated 2 March 1945 and 17 May 1950, provides for dredging a channel 500 feet wide and 30 feet deep across San Bruno Shoal in San Francisco Bay; a channel 300 feet wide and 30 feet deep to the vicinity of the confluence of Westpoint Slough and Redwood Creek, with Turning Basin No. 1 at that location 2,200 feet long and from 400 to 900 feet wide; thence a channel 400 feet wide, 30 feet deep, and approximately 1,300 feet long flaring to Turning Basin No. 2 approximately 900 feet wide, 1,700 feet long, and 30 feet deep; thence a channel 150 feet wide and 5 feet deep extending to Steinberger Slough. The project was completed in 1965 and is under maintenance.

All depths refer to mean lower low water. The tidal range is 6.9 feet at Point San Bruno 11 miles north of Redwood City and 7.9 feet at the Port of Redwood City. The extreme ranges at the foregoing locations are 12 and 13 feet, respectively.

The table on the following page shows the controlling depths at mean lower low water in the improved channels at the Port of Redwood City. For current controlling depths, see "Notice to Mariners" and latest editions of National Ocean Survey Nautical Charts pertaining to this area.

SECTION	CONTROLLING DEPTH AT MLLW (FEET)	DATE OF SURVEY
San Bruno Shoal Channel.....	28.8	September 1977
San Francisco Bay to Beacon 7...	29.2	January 1990
Beacon 7 to Turning Basin No. 1.	29.1	January 1990
Turning Basin No. 1.....	28.7	January 1990
Turning Basin No. 1 to Turning Basin No. 2.....	27.5	January 1990
Turning Basin No. 2.....	28.9	January 1990
Redwood Creek, Turning Basin No. 2 to head of navigation...	3.2	July 87 *

* Not maintained.

HARBOR AND CHANNEL IMPROVEMENTS BY LOCAL INTERESTS

Under the requirements of the project, local interests have contributed one-half the first cost of dredging the channel and Turning Basin No. 1 to 27-foot depth; have provided bulkheaded disposal areas for dredged materials; and have constructed required terminal facilities.

The Board of Port Commissioners of the City of Redwood City and the Leslie Salt Company have dredged a channel 150 feet wide and 28 feet deep extending from the upper end of Turning Basin No. 1 to and including Turning Basin No. 2 at the Leslie Salt Company wharf.

The City of Redwood City has constructed a Municipal Marina in Boundary Slough at its junction with Redwood Creek. Marshland adjacent to the port property has been reclaimed with material dredged from Westpoint Slough and Redwood Creek.

The conditions of local cooperation have been fully satisfied for the work performed. Local interests must provide rights-of-way and dredged material disposal areas with necessary impounding works for project maintenance.

ANCHORAGES

Anchorage areas and the regulations governing their use are given under the San Francisco section of this report beginning on page 3.

BRIDGES

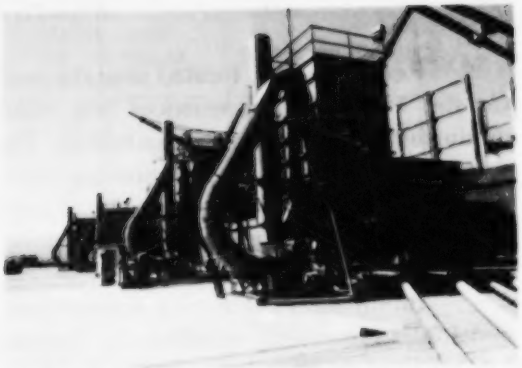
From the ocean, vessels must pass under three bridges before entering Redwood City Harbor: the Golden Gate Bridge crossing Golden Gate Strait, and the San Francisco-Oakland Bay Bridge and the San Mateo-Hayward Bridge crossing San Francisco Bay proper. These bridges are described under the San Francisco section of this report on page 13.

WEATHER CONDITIONS

Redwood City, located near the southern end of the San Francisco Peninsula east of the Coastal Mountains, experiences less windy summers than does San Francisco, due to the diminishing influence of the sea breeze. The low overcast often occurs in the southern peninsula area for a few hours in the morning but occurs later and does not persist as long as in the northern section of the peninsula. Summer nights are comfortably cool with minimum temperatures averaging in the low 50's.

Information concerning temperature conditions, precipitation, prevailing wind direction, and fog is not readily available for Redwood City. The weather conditions at San Francisco International Airport, located 10 1/2 miles north of the harbor, and as presented on page 14 of this report are considered nearly representative of those prevailing at Redwood City, taking into account the above-mentioned variation.

PORT OF REDWOOD CITY, WHARVES NOS. 1 AND 2
(P.W.D. Ref. No. 2)



PNEUMATIC HOPPERS FOR RECEIPT OF CEMENT AT PORT OF REDWOOD CITY, WHARVES NOS. 1 AND 2
(P.W.D. Ref. No. 2)

LOWER SIDE, PORT OF REDWOOD CITY, WHARF NO. 3
(P.W.D. Ref. No. 3)

UPPER SIDE, PORT OF REDWOOD CITY, WHARF NO. 3
(P.W.D. Ref. No. 3)

SCRAP LOADING CONVEYOR SYSTEM, PORT OF REDWOOD CITY, WHARF NO. 3
(P.W.D. Ref. No. 3)

PORT OF REDWOOD CITY, GEOLOGICAL SURVEY WHARF NO. 4
(P.W.D. Ref. No. 4)

APPROACH TO PORT OF REDWOOD CITY
GEOLOGICAL SURVEY WHARF NO. 4
(P.W.D. Ref. No. 4)

PORT OF REDWOOD CITY, WHARF NO. 5
(P.W.D. Ref. No. 5)

STORAGE AREA AT REAR OF LESLIE
SALT CO., SALT LOADING WHARF
(P.W.D. Ref. No. 6)

LESLIE SALT CO., SALT LOADING CONVEYOR SYSTEM
(P.W.D. Ref. No. 6)

LESLIE SALT CO., SALT LOADING WHARF
(P.W.D. Ref. No. 6)

PORT OF REDWOOD CITY, CALIFORNIA

PORT AND HARBOR FACILITIES

PIERS, WHARVES, AND DOCKS

Eight wharves and docks, and one barge mooring facility are described in this report for the Port of Redwood City, California. One is located on Westpoint Slough; six on the right bank, and one on the left bank of Redwood Creek between the entrances to Westpoint and Smith Sloughs; and one on Boundary Slough.

Each facility is described under a reference number in the table of Piers, Wharves, and Docks beginning on page 63. These reference numbers designate facility locations on the accompanying Port Facilities map.

The waterfront facilities in the port area used exclusively by recreational craft are not included in this report.

The Board of Port Commissioners of the City of Redwood City owns and operates three facilities engaged in handling general cargo in the Port of Redwood City. A summary of these facilities is given below.

The table on the following page summarizes the functional uses of the various piers, wharves, and docks which can be identified by their respective P.W.D. reference number.

SUMMARY OF GENERAL CARGO HANDLING

P.W.D. REF. NO.	TERMINAL	BERTHING SPACE (FEET)	DEPTH ALONGSIDE (FEET)	TRANSIT SHEDS		OPEN STORAGE AREA
				NO.	CARGO SPACE (SQ.FT.)	
	Port of Redwood City					
2	Wharves Nos. 1 and 2.	930	36	1	30,000	6 acres.
3	Wharf No. 3.....	750	36	-	-	-
5	Wharf No. 5.....	500	36	-	-	7 acres.

PURPOSE FOR WHICH USED

LOCATION	A	B				C	B		D
P.W.D. REFERENCE NUMBER	1	2	3	4	5	6	7	8	9
Cargo handling:									
General cargo:									
Conventional.....		o	o		o				
Heavy lift items...					o				
Cement.....		o							
Lumber.....					o				
Petroleum products...					o				
Salt.....						o			
Sand/gravel.....	o								
Scrap metal.....			o						
Fleeting.....									o
Mooring:									
Company-owned equipment.....	o								
Oceanographic research vessels...				o			o	o	

A - LEFT BANK, WESTPOINT SLOUGH
B - RIGHT BANK, REDWOOD CREEK
C - LEFT BANK, BOUNDARY SLOUGH
D - LEFT BANK, REDWOOD CREEK

CORPS OF ENGINEERS PORT CODE NO.	92238 Dock Code No. 020	92238 Dock Code No. 770	92238 Dock Code No. 750
REFERENCE NUMBER ON MAP NO.	1	2	3
NAME	Bell Marine Co. Wharf.	Port of Redwood City, Wharves Nos. 1 and 2.	Port of Redwood City, Wharf No. 3.
LOCATION ON WATERFRONT	Left bank of Westpoint Slough, above junction with Redwood Creek.	Right bank of Redwood Creek, approximately 2.3 miles above mouth.	Right bank of Redwood Creek, approximately 2.4 miles above mouth.
OWNED BY	Bell Marine Co., Inc.	Port of Redwood City.	Port of Redwood City.
OPERATED BY	Bell Marine Co., Inc.	Board of Port Commissioners of the City of Redwood City; Kaiser Cement Corp.; FMC Lonestar Industries, Inc.	Board of Port Commissioners of the City of Redwood City; and Levin Metals Corp.
PURPOSE FOR WHICH USED	Receipt of sand and gravel; mooring company-owned tugboats and barges.	Receipt and shipment of general cargo and bulk cement.	Receipt and shipment of general cargo; and shipment of scrap metal.
TYPE OF CONSTRUCTION	Concrete pile, concrete-decked, part offshore wharf with 50- by 22-foot approach; fronted by timber fender piles.	Part concrete-jacketed timber pile; part asphalt-, part concrete-surfaced, timber-decked wharf; with four approaches: one 43- and one 30-foot by 23 foot; one 80- by 16-foot; and one 110- by 3-foot; 2 breasting dolphins in line with face.	Concrete pile, concrete-decked, offshore wharf with two 50-foot wide approaches; wharf is fronted by timber fender piles; 2 concrete breasting dolphins in line with face on upper side connected by catwalk.

DESCRIPTION	Wharf	Face	Lower side	Upper side	Face	Lower side	Upper side
Dimensions (Feet)	640 by 12	855	130	25	450	120	110
Depth Alongside at MLLW Do.	12	36	-	-	36	-	-
Breasting Distance Do.	640	855			450	-	
Total Berthing Space Do.	640	930w/dolphs			750 w/dolphs (See Remarks)		
Width of Apron Do.	Open.	22 and open.			65		
Height of Deck at MLLW Do.	13	15.3			15.3		
Load Capacity (Lbs. per Sq. Ft.)	250	500			450		
Lighted or Unlighted	Lighted	Lighted.			Lighted.		
TRANSIT SHEDS	None.	One-timber frame, metal-covered; asphalt floor.			None.		
Number and Description							
Length and Width (Feet)		303 by 100					
Height Inside Do.		15-28					
Floor Area for Cargo (Sq. Ft.)		30,000					
Load Capacity (Lbs. per Sq. Ft.)		500					
Cargo Doors		Shipside: five 14 by 10; ends: one 16 by 13, each; rear: five 14 by 10.					

MECHANICAL HANDLING FACILITIES	One 65-, and one 25-ton, diesel crawler cranes, with 80- and 70-foot booms, respectively, equipped with 3-, and 2-cubic yard clamshell buckets; and one 5-cubic yard, diesel, front-end loader.	Three 2 1/2-ton, gasoline, forklift trucks; one hose-handling derrick with 25-foot boom; two 8 cubic-yard, clamshell buckets for use by ship's cranes to unload cement into one of two receiving hoppers on apron, each served by 2 pneumatic tanks and pneumatic lines listed in remarks. In addition, stevedore equipment is available as required.	One elevated, telescopic, 36-inch, shuttle-conveyor boom, with 40-foot outboard reach, served by inclined 48-inch electric belt-conveyor system extending to loading pit at rear; loading rate 200- to 400-tons per hour. One 30-, and one 20-ton, diesel crawler cranes with 90- and 60-foot booms, respectively; and bulldozers serve scrap shredder and open storage area at rear.
RAILWAY CONNECTIONS	None.	One surface track serving transit shed connects with Southern Pacific Transportation Co.	Two surface tracks in rear connect with tracks of Southern Pacific Transportation Co.
HIGHWAY CONNECTIONS	Via Seaport Boulevard, paved, 24 feet wide, from Bayshore Freeway (U.S. Highway 101).	Via Hinman Road, paved, 28 feet wide, from Seaport Boulevard, paved, 24 feet wide from Bayshore Freeway (U.S. Highway 101).	Via Sidney D. Harkner Road, from Seaport Boulevard, each paved, 24 feet wide, from Bayshore Freeway (U.S. Highway 101).
WATER SUPPLY (For Vessels)	None.	Through 4-inch metered line with 3/4- and 2 1/2-inch connections.	Through 4-inch metered line with 3/4- and 2 1/4- inch connections.
ELECTRIC CURRENT (For Vessels)	A.C., 110/220 volts.	A.C., 110/220/440 volts.	A.C., 110/220/440 volts.
FIRE PROTECTION (Other Than City)	None.	Sprinkler system in transit shed, water line, hydrants, hose, and hand extinguishers. (See Remarks.)	Hydrant, hose, and hand extinguishers.
REMARKS	One 16-inch, slurry pipeline extends from wharf to a 20,000-ton-capacity diked, open storage area at rear.	Kaiser Cement Corp.: Two 10-inch pneumatic pipelines extend from wharf to 6 cement storage silos and 9 interstices at rear, total capacity 10,960 tons. FMC Lonestar Industries, Inc.: Two 12-inch pneumatic pipelines extend from wharf to 34 concrete silos with 39 interstices and peripheral bins at rear, total capacity 100,000 tons. Approximately 6 acres of open storage available at rear. Wharf No. 1 is the lower, and Wharf No. 2 is the upper section. Multiple 10- by 10-inch fire hose access holes are located on Wharf No. 1.	Dolphins are in line with face of adjacent Wharf No. 4 (P.W.D. 4), providing 1,100 feet of continuous berthing space. Open storage area at rear has capacity 20,000 tons of shredded scrap.

CORPS OF ENGINEERS PORT CODE NO.	82238 Dock Code No. 734	82238 Dock Code No. 717			82238 Dock Code No. 697
REFERENCE NUMBER ON MAP NO.	4	5			6
NAME	Port of Redwood City, Geological Survey, Wharf No. 4.	Port of Redwood City, Wharf No. 5.			Leslie Salt Co., Salt Loading Wharf
LOCATION ON WATERFRONT	Right bank of Redwood Creek, approximately 2.6 miles above mouth.	Right bank of Redwood Creek, approximately 2.8 miles above mouth.			Left bank of Boundary Slough at junction with Redwood Creek.
OWNED BY	Port of Redwood City.	Port of Redwood City.			Leslie Salt Co., a Cargill Company
OPERATED BY	Minerals Management Service, U.S. Geological Survey, Department of the Interior.	Board of Port Commissioners of the City of Redwood City; Pope and Talbot, Inc.; and Pilot Petroleum, Inc.			Leslie Salt Co.
PURPOSE FOR WHICH USED	Mooring oceanographic research vessels.	Receipt and shipment of general cargo and heavy lift items; receipt of lumber and petroleum products.			Shipment of crude bulk salt by vessel and barge.
TYPE OF CONSTRUCTION	Concrete pile, concrete-decked, offshore wharf with 120- by 24-foot curved, concrete approach to upper side; four concrete breasting dolphins in line with face connected by catwalks.	Precast concrete pile, asphalt surfaced, concrete-decked, offshore wharf with two 100- by 20-, and one 100- by 12-foot approaches. Wharf is fronted by rubber-cushioned timber fender system.			Timber pile, timber-decked, offsh wharf with 150- by 20-foot, concre pile, timber-decked approach. Catwalks extend from lower end sou sides behind row of 3 mooring dolphins in line with face on eas side.
DESCRIPTION	Wharf	Face	Lower side	Upper side	Face
Dimensions (Feet)	80 by 52	500	160	80	267 by 17
Depth Alongside at MLLW Do.	36	36	-	-	30
Breasting Distance Do.	400 w/dolphins	500	-	-	267
Total Berthing Space Do.	400 w/dolphins (See Remarks)	500	-	-	620 w/dolphins
Width of Apron Do.	50	50			Open.
Height of Deck at MLLW Do.	15.3	15			16
Load Capacity (Lbs. per Sq. Ft.)	-	800			500
Lighted or Unlighted	Lighted.	Lighted.			Lighted.
MECHANICAL HANDLING FACILITIES	None.	Pope and Talbot, Inc.: two 17 1/2-, and four 16-ton, diesel, mobile fork lift trucks. Additional equipment is available as required by all operators.			One steel loading tower on concrete pile, concrete-decked platform wh hinged, horizontal conveyor boom with a maximum outboard reach of feet, and equipped with loading chute and electric trimmer, maxim loading rate 800 tons per hour. Tower is served by a 36-inch, electric, belt-conveyor system extending from ground-level hoppe serving open storage area at rear
RAILWAY CONNECTIONS	Surface tracks along shore in rear connect with Southern Pacific Transportation Co.	One surface track serving open storage area at rear connects with Southern Pacific Transportation Co.			None.
HIGHWAY CONNECTIONS	Via Sidney D. Harkner Road, from Seaport Boulevard, each paved, 24 feet wide, from Bayshore Freeway (U.S. Highway 101).	Via Henry A. Seeger Road, paved, from Seaport Boulevard, each paved, 24 feet wide, from Bayshore Freeway (U.S. Highway 101).			Via private road, from Seaport Boulevard, each paved, 24 feet wi and Bayshore Freeway (U.S. Highwa 101).
WATER SUPPLY (For Vessels)	Through 4-inch metered line with 3/4- and 2 1/4- inch connections.	Through 4-inch line.			Through 4-inch line.
ELECTRIC CURRENT (For Vessels)	A.C., 115/220/440 volts.	A.C., 110/220 volts.			None.
FIRE PROTECTION (Other Than City)	Hydrant, hose, and hand extinguishers.	Hydrants, hose, and hand extinguishers.			Water line with 2-inch connection at hose stations on wharf.
REMARKS	Research and survey vessels *SP Lee* and *Polaris* are normally stationed at wharf.	Pilot Petroleum, Inc.: Five 10-inch pipelines extend from wharf to 9 steel storage tanks at terminal in rear, total capacity 357,000 barrels. Approximately 7 acres of open storage are located in rear.			Open storage area at rear of wha has capacity for 500,000 tons of salt, and is served by electric, traveling, steel-truss conveyor b served by 42-inch, electric belt conveyor extending from receivin hoppers at south end for salt reclaimed from seawater at south evaporator beds and trucked to storage area. A similar loading tower on upper side of wharf was inoperable at time of survey.

CORPS OF ENGINEERS PORT CODE NO.	02230 Dock Code No. 677		02230 Dock Code No. 680	02230 Dock Code No. 780	
REFERENCE NUMBER ON MAP NO.	7		8	9	
NAME	Redwood City Marine Research and Education Pier.		Lockheed Shipbuilding, Inc. Redwood City Wharf.	Port of Redwood City LASH Barge Mooring.	
LOCATION ON WATERFRONT	Right bank of Redwood Creek, approximately 1,000 feet above junction with Boundary Slough.		Right bank of Redwood Creek, approximately 1,200 feet above junction with Boundary Slough.	Left bank of Redwood Creek, west shore, Turning Basin No. 1, approximately 2.3 miles above mouth.	
OWNED BY	Leslie Salt Co., a Cargill Company.		United States Government.	Port of Redwood City.	
OPERATED BY	Marine Ecological Institute.		Lockheed Shipbuilding, Inc.	Board of Port Commissioners of City of Redwood City.	
PURPOSE FOR WHICH USED	Mooring oceanographic research vessel.		Mooring oceanographic research vessels.	Mooring and fleeting vessel-borne barges.	
TYPE OF CONSTRUCTION	Timber pile, timber-decked offshore wharf with 75- by 10-foot approach; fronted by 7 permanently moored, timber-decked, plastic foam-filled floats.		Steel sheet pile bulkhead with concrete-surfaced solid fill; fronted by timber fender system.	Fourteen breasting dolphins and 5 mooring dolphins form two-stepped, vessel-borne barge mooring areas.	
DESCRIPTION	Pier	Floats	Face	Upper Mooring	Lower Mooring
Dimensions (Feet)	20 by 35	12-40 x 8-16 wide	380	803 w/dolphins.	723 w/dolphins.
Depth Alongside at MLLW Do.	7	7	11	4 - 10	3 - 4
Breasting Distance Do.	85 w/floats	300, approximately	380	80 barges	80 barges
Total Berthing Space Do.	85 w/floats	300, approximately	380	80 barges	80 barges
Width of Apron Do.	Open.		45 and open.	-	
Height of Deck at MLLW Do.	7		8	-	
Load Capacity (Lbs. per Sq. Ft.)	-		1,500	-	
Lighted or Unlighted	Lighted.		Lighted.	-	
MECHANICAL HANDLING FACILITIES	None.		One, approximately 40-ton, diesel, stiff-leg derrick with 55-foot boom. Additional equipment is available as required.	None.	
RAILWAY CONNECTIONS	None.		One surface track serves building in rear; connects at Southern Pacific Transportation Co.	None.	
HIGHWAY CONNECTIONS	Via driveway, partly paved, various widths, from Seaport Boulevard, paved, 24 feet wide, from Bayshore Freeway (U.S. Highway 101).		Via private road, paved, 12 and 24 feet wide, from Seaport Boulevard, asphalt, 24 feet wide and Bayshore Freeway.	None.	
WATER SUPPLY (For Vessels)	Through 3/4-inch connections.		Through 4-inch line.	None.	
ELECTRIC CURRENT (For Vessels)	A.C., 110/220 volts.		A.C., 110/220/480 volts.	None.	
FIRE PROTECTION (Other Than City)	Hand extinguishers.		Fire pump with 4-inch suction line, hydrants, hose, hand extinguishers, and security patrol.	None.	
REMARKS	-		-	-	

OIL HANDLING AND BUNKERING

One waterfront facility described in this section of the report is equipped to receive petroleum products. Port of Redwood City Wharf No. 5 (P.W.D. Ref. No. 5), has five pipelines extending to nine steel storage tanks at rear, with a total capacity of 357,000 barrels.

Large oceangoing vessels are bunkered at berth by tank truck, or by tank barges based at Oakland or Richmond, California. These barges, together with their capacities and sizes, are listed separately in the tabulation of Floating Equipment on page 53. Tank storage at recreational craft service stations is not within the scope of this report.

WAREHOUSES

Commodities arriving at the Port's general cargo facilities and requiring long-term protection from the weather are generally stored in the transit shed at the Port of Redwood City, Wharves Nos. 1 and 2 (P.W.D. Ref. No. 2). A number of companies operate dry and cold storage warehouses in nearby San Francisco and its southern suburbs. Most of them perform the full complement of warehouse service, including packing, crating, forwarding, and pool car distribution, and have rail connections. Details of these facilities are given in the table of Storage Warehouses beginning on page 41 of this report.

OPEN STORAGE

The Port of Redwood City has 13 acres of improved open storage area with 6 acres adjacent to Wharves Nos. 1 and 2 (P.W.D. Ref. No. 2) and 7 acres adjacent to Wharf No. 5 (P.W.D. Ref. No. 5). In addition, the Port owns approximately 40 acres in several locations along the right bank of Redwood Creek which, at the time of survey, were leased to individual operators to meet their needs.

The other operators at the port have open storage areas to meet their own operational requirements; these areas usually are not available for public use.

HOISTING EQUIPMENT - ASHORE AND AFLOAT

The cranes and equipment located at the various wharves are for the sole use of the operating companies and are described under "Mechanical Handling Facilities" in the preceding table of Piers, Wharves, and Docks.

Conventional general cargo at the port usually is handled to and from vessels by ships' tackle. Heavy-lift, land-based cranes and derricks are available locally on a rental basis. Floating cranes for the transfer of heavy lifts up to 350 tons, based in Alameda, California, are described on page 46 in the San Francisco section of this report.

MARINE REPAIR PLANTS AND DRYDOCKING EQUIPMENT

Facilities are not available for making major repairs, drydocking, or hauling out large deep-draft vessels at the port; the nearest such facilities are at the Port of San Francisco and are described on pages 49 through 52. Other nearby marine repair plants are located in the cities of Alameda, Oakland, and Richmond, and are described in Port Series Report No. 31, The Ports of Oakland, Alameda, Richmond, and Ports on Carquinez Strait, California, revised in 1991.

FLOATING EQUIPMENT

Tugs with ratings up to 7,200 horsepower based at other San Francisco Bay ports are available upon request. Details of this equipment are given on page 53.

Additional information on floating equipment can be obtained from "Waterborne Transportation Lines of the United States" which is described on page 47.

RAIL LINES

Trackage serving the waterfront facilities at the Port of Redwood City connect with the Southern Pacific Transportation Co.

THE PORT OF HUMBOLDT BAY, CALIFORNIA

PORT AND HARBOR CONDITIONS

LOCATION AND GENERAL DESCRIPTION

The Port of Humboldt Bay, California, is located in the northwestern part of the state, approximately 225 nautical miles north of San Francisco and 156 nautical miles south of Coos Bay, Oregon, and includes two shallow bays: South Bay below the Entrance channel, and Arcata Bay, or North Bay, above the Entrance channel, connected by a narrow channel approximately 5 miles long. A system of dredged channels in Humboldt Bay are described as follows: the entrance channel from the Pacific Ocean, leading into a turning basin in Humboldt Bay; the Fields Landing Channel, which extends south from the turning basin and serves Fields Landing; the North Bay Channel which extends north from the turning basin toward Indian Island, located at the south end of Arcata Bay; the Samoa Channel which extends from the north end of the North Channel along the west side of Indian Island, and serves the community of Samoa; and the Eureka Channel which extends from the north end of the North Channel along the southeast side of Indian Island, and serves the Eureka waterfront.

Logs, wood pulp, wood chips, lumber, and seafood are the principal waterborne commodities handled in Humboldt Bay.

HARBOR AND CHANNEL IMPROVEMENTS BY THE UNITED STATES

The original project for improvement of Humboldt Bay and Humboldt Harbor, California was authorized by the River and Harbor Act of 25 June 1910, and as modified by subsequent acts dating from 3 July 1930 to 13 August 1968, provides for:

a. Rebuilding two rubblemound jetties at entrance - north jetty about 4,500 feet long and south jetty 5,100 feet long.

b. A bar and entrance channel 40 feet deep tapered from 1,600 feet wide at seaward, mile 0.91 to 500 feet wide at seaward, mile 0.18, thence 500 feet wide to mile 0.75, with easing of bend at mile 0.75.

c. Deepening of the North Bay Channel (400 feet wide) to a depth of 35 feet between mile 0.75 to mile 4.29; and widening of the channel bends in the North Bay Channel at mile 0.75, mile 2.00, and mile 2.60.

d. Deepening the Eureka Channel (400 feet wide) to a depth of 35 feet between mile 4.29 and mile 5.00 (400 feet wide by 35 feet deep, mile 5.00 to mile 6.30).

e. Deepening and widening of Samoa Channel between mile 4.29 and mile 5.84 by increasing the channel depth to 35 feet, and increasing the existing 300-foot channel width to 400 feet.

f. A turning basin beyond mile 5.84 at the upper end of the Samoa channel 35 feet deep and 1,000 feet wide by 1,100 feet long.

g. An anchorage area in North Bay 35 feet deep, 1,200 feet wide, and 1,200 feet long. (Authorized but not maintained.)

h. A channel 26 feet deep and 300 feet wide to Fields Landing, with a turning basin 600 feet wide and 800 feet long off Fields Landing Wharf.

The Arcata Channel (extreme North Bay) is no longer used for commercial navigation, and has not been maintained since 1931.

All depths are referred to mean lower low water (MLLW) datum.

The table below shows controlling depths and project dimensions for the channels in Humboldt Bay.

CONTROLLING DEPTHS AND PROJECT DIMENSIONS

SECTION OF WATERWAY	DATE OF SURVEY	CONTROLLING DEPTHS (FEET)	AUTHORIZED PROJECT DIMENSIONS		
			DEPTH (FEET)	WIDTH (FEET)	LENGTH (MILES)
Bar and Entrance Channel	11-89	39.2	40	1,600-500	0.9
Entrance Channel to intersection of Fields Landing and North Bay Channels	11-89	39.2	40	500	0.8
North Bay Channel	5-90	35.0	35	400(1)	3.5
Eureka Channel Outer Reach:					
Mile 4.3 to mile 5.0	5-90	34.7	35	400	0.7
Mile 5.0 to foot of A Street	5-90	22.6	26	400	0.8
Foot of A Street to mile 6.3	5-90	20.5	26	400	0.8
Samoa Channel	5-90	34.7	35	400	1.6
Samoa Turning Basin	5-90	34.7	35	1,000	0.2
Fields Landing Channel	5-90	26.0(2)	26	300	2.3
Fields Landing Turning Basin	5-90	26.0	26	600	0.15

(1) Widening of channel bends at mile 0.75, mile 2.00 and mile 2.60.
(2) Left quarter.

HARBOR AND CHANNEL IMPROVEMENTS BY LOCAL INTERESTS

The River and Harbor Act of 13 August 1968 requires local interests to:

1. Provide and maintain adequate wharf and terminal facilities in the North Bay, Eureka, and Samoa Channels, open to all on equal and reasonable terms for the storage, handling, and shipment of lumber and general commerce;

2. Provide and maintain depths in the berthing areas and local access channels serving terminals and wharves commensurate with depths provided in related project channels;

3. Provide all lands, easements and rights-of-way required for construction and subsequent maintenance of the project and for aids to navigation upon request of the Chief of Engineers, including suitable areas determined by the Chief of Engineers to be required in the general public interest for initial disposal of dredged material, and necessary retaining dikes, bulkheads, and embankments therefor, or the cost of such retaining works;

4. Hold and save the United States free from all claims for damages to wharves, piers, and other marine and submarine structures due to initial dredging work and subsequent maintenance dredging;

5. Accomplish at local expense all alterations that may be required to sewer, water supply, drainage, and other utility facilities;

6. Comply with all pertinent provisions of Public Law 91-646 in the land acquisition program;

7. Prohibit construction of new terminals and related structures within 125 feet of project lines along North Bay and Samoa channels;

8. Establish regulations concerning discharge of pollutants in waters of harbors, in accordance with applicable laws and regulations;

9. Provide for re-vegetation of the upland disposal sites, and insure propagation of any rare plants found on the sites; and

10. Monitor groundwater quality, in active wells that may be affected by dredge material disposal and undertake measures necessary to provide adequate drinking water.

The conditions of local cooperation for work performed have been fully satisifed.

TIDAL RANGE AND CURRENTS

The mean range of tide at Eureka is 4.8 feet. The mean tidal range is 6.2 feet at the south jetty, 6.7 feet at Eureka and Fields Landing, and 7.0 feet at Samoa. Extremes may vary from 11 to 12 feet at times of maximum tides.

The tidal currents follow the general direction of the channels. In the main channel, the velocity is less than 2 knots and does not exceed 3 knots. Between the jetties, the velocity is about 2 knots, with a maximum of about 4 knots.

A tsunami wave, produced by the 1964 Gulf of Alaska earthquake, had a recorded maximum height of 12 feet on the inside of the north spit in Humboldt Bay, with a maximum high water elevation of 9 feet MLLW. A maximum high water elevation of 12.4 feet MLLW was noted on the east side of the Bay opposite the entrance. Strong currents were estimated at 14 knots in the North Channel.

ANCHORAGES

Vessels must keep clear of the cables crossing the channel just above Fairhaven. It is forbidden to anchor in Eureka Channel longer than 24 hours at a time except for vessels up to 525 feet temporarily awaiting berth. Larger vessels only may anchor at one tide in summer.

BRIDGES

A fixed highway bridge crosses Humboldt Bay from Eureka, to a point just above Samoa on the Samoa Peninsula. Clearances of the fixed spans are 40 feet vertical, 150 feet horizontal from Eureka to Woodley Island; 30 feet vertical, 100 feet horizontal from Woodley Island to Indian Island; and 45 feet vertical, 200 feet horizontal from Indian Island to the Samoa Peninsula. Vertical clearances are referred to mean high water.

WEATHER CONDITIONS

The climate of Eureka is completely maritime with high humidity prevailing the entire year. There are definite rainy and dry seasons. The rainy season begins in October and continues through April, accounting for about 90 percent of the year's precipitation. The dry season from May through September, is marked by considerable fog or low cloudiness that usually clears in the late morning, and sunny weather is generally the case during the early afternoon hours; however, fog may occur in any month, with the heaviest prevalent in the months of January, July, August, and December.

Temperatures are moderate the entire year. Although the record highs have reached the mid 80's, and record lows near 20 degrees, the usual yearly range is from lows in the mid 30's to highs in the mid 70's.

The information below was compiled by the National Weather Station at the Post Office Building at 5th and H Streets in Eureka, California, and furnished by the Environmental Satellite Data and Information Service, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

METEOROLOGICAL DATA FOR PERIOD OF RECORD

TIME	NORMAL DAILY TEMPERATURE F°		NORMAL TOTAL PRECIPITATION (INCHES)	PREVAILING DIRECTION OF WINDS	HEAVY FOG* (DAYS)
	MAXIMUM	MINIMUM			
No. of years	28	28	28	54	65
January.....	53.4	41.3	6.99	SE	4.1
February.....	54.6	42.6	5.20	SE	2.7
March.....	54.0	42.5	5.05	N	1.9
April.....	54.7	44.0	2.91	N	1.6
May.....	57.0	47.3	1.60	N	1.2
June.....	59.1	50.2	0.56	N	2.2
July.....	60.3	51.9	0.10	N	3.4
August.....	61.3	52.6	0.37	NW	5.3
September....	62.2	51.5	0.90	N	7.4
October.....	60.3	48.3	2.71	N	9.5
November.....	57.5	45.2	5.90	SE	6.2
December.....	54.5	42.2	6.22	SE	4.4
Year	57.4	46.6	38.51	N	49.9

* Visibility 1/4 mile or less.

NORTH COAST EXPORT CO. WHARF
(P.W.D. Ref. No. 4)

LOUISIANA PACIFIC CORP., SAMOA WHARF
(P.W.D. Ref. No. 8)

CITY OF EUREKA K STREET PIER
(P.W.D. Ref. No. 8)

CITY OF EUREKA J STREET PIER
(P.W.D. Ref. No. 9)

NOR-CAL SEAFOODS, EUREKA I STREET WHARF
(P.W.D. Ref. No. 10)

UNOCAL EUREKA WHARF
(P.W.D. Ref. No. 19)

EUREKA FOREST PRODUCTS WHARF
(P.W.D. Ref. No. 20)

SOUTH BAY MARINA FIELDS LANDING PIER AND
EUREKA FISHERIES FIELDS LANDING WHARF
(P.W.D. Ref. Nos. 24 and 25)

HARBOR MARINE SERVICES WHARF
(P.W.D. Ref. No. 26)

PORT OF HUMBOLDT BAY, CALIFORNIA

PORT AND HARBOR FACILITIES

PIERS, WHARVES, AND DOCKS

A total of 26 piers, wharves, and docks are described in this report for the Port of Humboldt Bay, California. Six are located on the west shore of Humboldt Bay on the Samoa Peninsula, between the Entrance Channel and the Turning Basin at Samoa; one on the east shore of Woodley Island; 15 on the east shore in Eureka; and four on the east shore of South Bay in Fields Landing. Each facility is described in detail under a reference number in the table of Piers, Wharves, and Docks beginning on page 79. These reference numbers designate facility locations on the inclosed Port Facilities map for Humboldt Bay.

Waterfront facilities in the port area used exclusively by recreational craft are not included in this report.

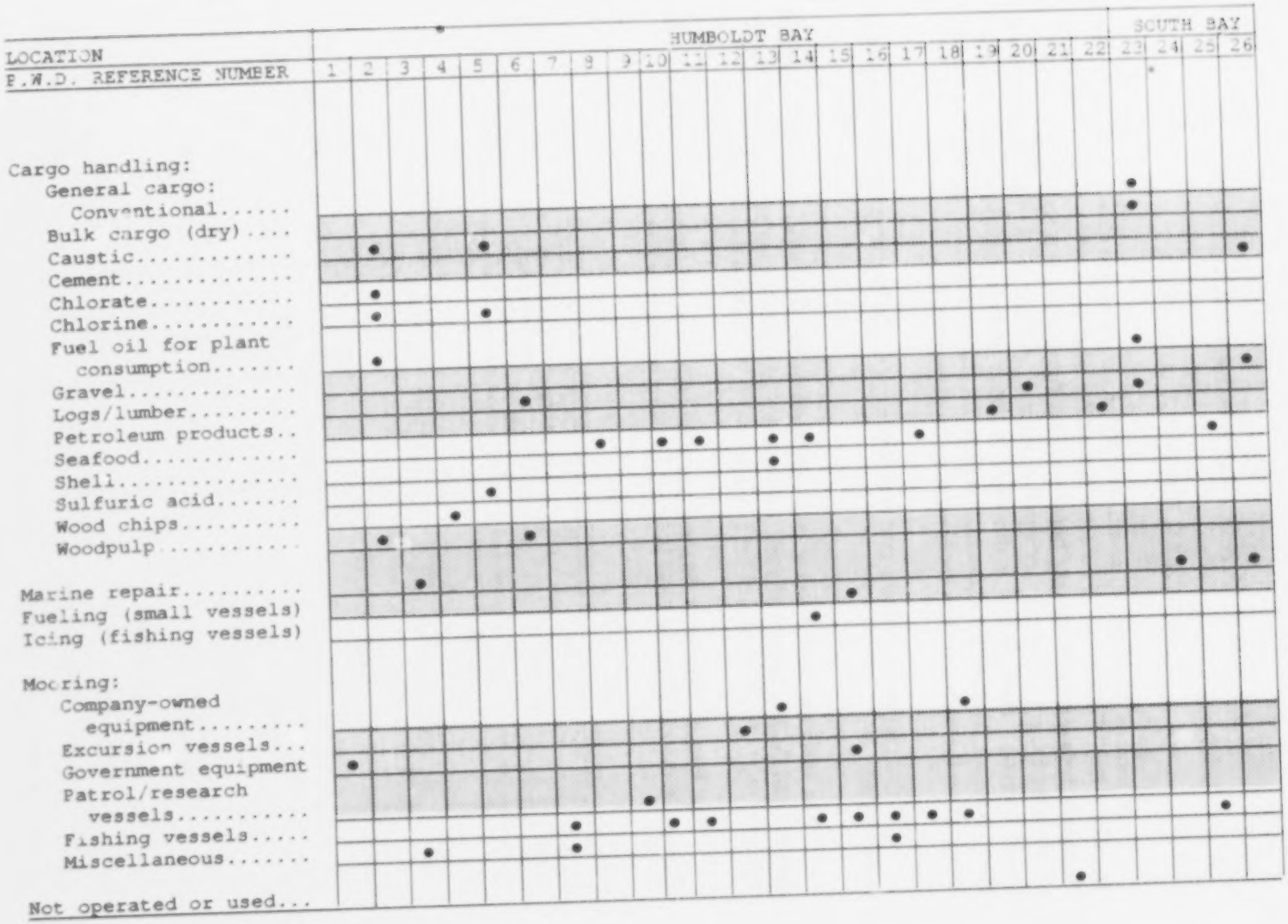
The table on the following page summarizes the functional uses of the various piers, wharves, and docks. Several of these facilities are used for various purposes, as indicated in the table, and each can be identified by its respective P.W.D. reference number.

The Port of Humboldt Bay exports a large volume of timber and timber products. A summary of the facilities engaged in handling these products is given below.

P.W.D. REF. NO.	OPERATOR	BERTHING SPACE (FEET)	DEPTH ALONGSIDE (FEET)	STORAGE CAPACITY
	LUMBER			
6	Louisiana Pacific Corp.	1,060	33-35	8,000,000 FBM (open)
20	Eureka Forest Products Co., Inc.	470+300	32-35/14	1,500,000 FBM (covered)
	LOGS			
20	Eureka Forest Products, Inc.	470+300	32-35/14	15,000,000 FBM (open)
23	Humboldt Bay Forest Products, Inc.	600	40	35,000,000 FBM (open) 40 acres. (1)
	WOOD CHIPS			
4	North Coast Export Co., Inc. Samoa Division	1,260	38	100,000 BDU (2)
	WOOD PULP			
2	Simpson Paper Co.	700+350	35-30	12,000 tons (covered)
6	Louisiana Pacific Corp.	1,060	33-35	10,000 tons (covered)

(1) Open storage for logs or lumber as required.
(2) Bone dry units.

PURPOSE FOR WHICH USED



CORPS OF ENGINEERS PORT CODE NO.	82690 Dock Code No. 927				82690 Dock Code No. 928			82690 Dock Code No. 917	
REFERENCE NUMBER ON MAP NO.	1				2			3	
NAME	U.S. Coast Guard Station, Humboldt Bay Pier.				Simpson Paper Co., Humboldt Pulp Mill Wharf.			South Bay Marina Samoa Division Pier.	
LOCATION ON WATERFRONT	Humboldt Bay, approximately 1.0 mile north of inner end of entrance channel, North Spit of Samoa Peninsula.				Humboldt Bay, Samoa Peninsula, approximately 3.0 miles north of inner end of entrance channel.			Humboldt Bay, Samoa Peninsula, approximately 3.5 miles north of inner end of entrance channel. 1483 Faye Avenue.	
OWNED BY	U.S. Government.				Simpson Paper Co.			South Bay Marina, Inc.	
OPERATED BY	U.S. Coast Guard.				Simpson Paper Co.			South Bay Marina, Inc.	
PURPOSE FOR WHICH USED	Mooring U.S. Coast Guard vessels.				Shipment of wood pulp; receipt of chlorine, chlorate, caustic soda, and fuel oil for plant consumption.			Mooring small vessels for repair.	
TYPE OF CONSTRUCTION	Offshore wharf: U-shaped, timber pile, timber-decked pier extensions fronting upper side of 20- by 30-foot timber pile, timber-decked platform with 180- by 5-foot timber approach to lower side; a 40- by 10-foot steel float is anchored to steel piles between extensions.				Timber pile, concrete-decked offshore wharf with 255- by 24 foot timber pile, concrete-decked approach; 3 timber pile breasting dolphins in line with face at each end connected by timber catwalks.			Timber pile, timber-decked pier.	
DESCRIPTION	Pier				Face	Rear of face*	Sides	Pier	
	Face	Outside	Inside	Float					
Dimensions (Feet)	46.5 total	60, ea.	45, ea.	2.5x40	500	370	70, each	280 by 3	
Depth Alongside at MLLW Do.	5-12	5-12	12	12	35	30	-	28-0	
Breasting Distance Do.	-	60	45+45	80 total	700 w/dolphs.	350	-	200 (See Remarks)	
Total Berthing Space Do.	-	60	45+45	80 total	700 w/dolphs.	350	-	200 (See Remarks)	
Width of Apron Do.	Open.				Open.			Open.	
Height of Deck at MLLW Do.	12				15			8	
Load Capacity (Lbs. per Sq. Ft.)	-				-			-	
Lighted or Unlighted	Lighted.				Lighted. *On upper side.			Unlighted.	
MECHANICAL HANDLING FACILITIES	None.				One 22-foot hose-handling boom on steel frame tower at rear of face.			One 2-ton ladder truck for sandblasting and painting.	
RAILWAY CONNECTIONS	None.				None.			None.	
HIGHWAY CONNECTIONS	Via driveway, paved, various widths, from Samoa Road and New Navy Base Road, each paved and 22 feet wide, from State Highway 255.				Via driveway, paved, various widths, from Samoa Road, paved, 22 feet wide.			Via Bay Street, paved, 18 feet wide from New Navy Base Road, paved, 22 feet wide.	
WATER SUPPLY (For Vessels)	Through 3/4-inch line.				Through 2-inch line.			None.	
ELECTRIC CURRENT (For Vessels)	A.C., 110/220 volts.				None.			None.	
FIRE PROTECTION (Other Than City)	Fire hose and hydrants.				Fire hose and hydrants.			Hydrant and hand extinguishers.	
REMARKS	Two marine railways, located on upper side of inner end of approach, were inoperable at time of survey.				One 16-inch pipeline extends from wharf to one 40,000-barrel fuel oil tank; one 6-inch pipeline extends to one 2,000-ton caustic tank; one 4-inch pipeline extends to six chlorate tanks, total capacity 1,800 tons; and one 4-inch pipeline extends to two chlorine tanks, total capacity 200,000 gallons. Warehouse at rear has capacity for 12,000 tons of wood pulp. Tankers or barges discharge fuel oil at face of wharf.			One 150-, one 100, and one 300-ton marine railways are located at inner end of lower side. Vessels usually enter and exit marine railway cradles without berthing at pier. Marine repair shops and office are located at rear.	

CORPS OF ENGINEERS PORT CODE NO.	82690 Dock Code No. 912	82690 Dock Code No. 904		82690 Dock Code No. 881		
REFERENCE NUMBER ON MAP NO.	4	5		6		
NAME	North Coast Export Co. Wharf.	Louisiana Pacific Corp., Samoa Chip Wharf.		Louisiana Pacific Corp., Samoa Wharf.		
LOCATION ON WATERFRONT	Humboldt Bay, Samoa Peninsula, approximately 3.9 miles north of inner end of entrance channel.	Humboldt Bay, approximately 1.4 miles below Eureka-Samoa Bridge (State Highway 255), Samoa.		Humboldt Bay, approximately 0.7 mile below Eureka-Samoa Bridge (State Highway 255), Samoa.		
OWNED BY	North Coast Export Co., Inc.	Louisiana Pacific Corp.		Louisiana Pacific Corp.		
OPERATED BY	North Coast Export Co., Inc., Samoa Division.	Louisiana Pacific Corp.		Louisiana Pacific Corp.		
PURPOSE FOR WHICH USED	Shipment of wood chips.	Receipt of chlorine, caustic soda, and sulfuric acid.		Shipment of wood pulp and lumber by ship and barge.		
TYPE OF CONSTRUCTION	Concrete-filled steel pipe pile, concrete-decked offshore wharf with 1,000- by 16-foot timber roadway approach; 3 concrete breasting dolphins in line with face at each end, one mooring dolphin above and one below at rear of face connected by timber catwalks.	Timber pile, timber-decked offshore wharf with 540- by 20-foot timber approach; 3 timber breasting dolphins in line with face, and one mooring dolphin above and one below, connected by catwalk. Timber pile, timber-decked barge wharf, with 4 timber breasting dolphins in line with face, extends from upper side of approach.		Timber pile, timber-decked wharf with timber pile, timber-decked extensions on lower and upper sides in line with face.		
DESCRIPTION	Face	Face	Barge Wharf	Face	Lower side	Upper side
Dimensions (Feet)	40 by 47	50, approx.	280 by 22 and 50	110+840+110	32+112+40	32+300
Depth Alongside at MLLW Do.	38	35	13-16	33-35	-	-
Breasting Distance Do.	1,260 w/dolphins	1,147 w/dolphs.	445 w/dolphs.	1,060	-	-
Total Berthing Space Do.	1,260 w/dolphins	1,147 w/dolphs.	445 w/dolphs.	1,060	-	-
Width of Apron Do.	12 and open.	8 and open.		Open.		
Height of Deck at MLLW Do.	20	20		9.5		
Load Capacity (Lbs. per Sq. Ft.)	-	-		-		
Lighted or Unlighted	Lighted.	Lighted.		Lighted.		
MECHANICAL HANDLING FACILITIES	Steel frame tower on wharf with 120-foot, cantilevered, swinging boom having 100-foot outboard reach and equipped with 36-inch telescopic, pneumatic loading chute with deflector, served by 72-inch, covered, inclined electric belt-conveyor system extending along upper side of roadway approach to wood chip storage area at rear; loading rate 1,200 tons per hour. Three 30-cubic yard, diesel, mobile, front-end loaders, one bulldozer and two hydraulic truck-dumpers serve open storage area.	Steel frame tower on wharf with 90-foot, cantilevered, swinging boom having 66-foot outboard reach equipped with 24-inch, telescopic, pneumatic loading chute with deflector, served by 48-inch, covered, inclined electric belt-conveyor system extending along lower side of approach from wood chip storage area at rear, loading rate 600 tons per hour; not in use at time of survey. Two bulldozers serve storage area at rear. Three hose-handling mast-and-boom derricks serve barge wharf.		Twelve 1- to 8-ton, diesel fork lift trucks.		
RAILWAY CONNECTIONS	One surface track at rear connects with Northwestern Pacific Railroad.	Eureka Southern Railroad: Surface tracks serving mill at rear connect with Northwestern Pacific Railroad.		Eureka Southern Railroad: Surface tracks serving mill at rear connect with Northwestern Pacific Railroad.		
HIGHWAY CONNECTIONS	Via Faye Street, paved, 18 feet wide from New Navy Base Road, paved, 22 feet wide.	Via LP Drive, paved, various widths, from New Navy Base Road, paved, various widths.		Via Driveway, paved, various widths from Bay View Avenue, from Vance Avenue, each paved, 20 feet wide.		
WATER SUPPLY (For Vessels)	Through 2-inch line.	Through 3-inch line.		Through 1 1/2-inch line.		
ELECTRIC CURRENT (For Vessels)	None.	None.		None.		
FIRE PROTECTION (Other Than City)	Hose, 6-inch waterline, hand extinguishers and security patrol.	Sprinkler system serves dock and conveyor; hose and hand extinguishers.		Hydrant, four water line and hose connections, and underdeck nozzles.		
REMARKS	Open storage area for 100,000 BDU (Bone Dry Units) of wood chips located in rear.	Barge wharf: two 4-inch pipelines extend to 6 chlorine storage tanks, total capacity 1,800 tons; one 4-inch pipeline extends to one 25,000 gallon-sulfuric acid storage tank; and one 4-inch pipeline extends to 3 caustic soda storage tanks, total capacity 350,000 gallons. Open storage area at rear has capacity for 36,000 BDU of wood chips.		Wharf has open storage area for 4,000,000 board feet of lumber on apron, and 4,000,000 board feet in open storage area at rear. Building at rear has capacity for 10,000 tons of wood pulp.		

CORPS OF ENGINEERS PORT CODE NO.	62690 Dock Code No. 256	62690 Dock Code No. 242	62690 Dock Code No. 241
REFERENCE NUMBER ON MAP NO.	7	8	9
NAME	Woodley Island Marina.	City of Eureka, K Street Pier.	City of Eureka, J Street Pier.
LOCATION ON WATERFRONT	Humboldt Bay, east shore, approximately 0.5 mile below Samoa-Eureka Bridge (State Highway No. 255), Woodley Island.	Humboldt Bay, foot of K Street extended, Eureka.	Humboldt Bay, above foot of J Street extended, Eureka.
OWNED BY	Humboldt Bay Harbor Recreation and Conservation District.	City of Eureka.	City of Eureka.
OPERATED BY	Humboldt Bay Harbor Recreation and Conservation District.	Caito Fisheries, Inc.	State of California Fish and Game Department.
PURPOSE FOR WHICH USED	Mooring fishing boats, and recreational and other small craft.	Receipt of seafood.	Mooring patrol and research vessels.
TYPE OF CONSTRUCTION	Six lower, and 3 upper, parallel, concrete float extensions, anchored by concrete piles, each with inclined ramp at inner end, and divided into berths by additional floats on upper and lower sides; an additional, L-shaped float on lower side serves as transient vessel mooring. (See Remarks.)	Timber pile, timber-decked pier with 2 timber mooring dolphins in line with face.	Timber pile, timber-decked pier fronted by timber floats moored to timber piles; inclined timber ramp extends from floats to pier.

DESCRIPTION	Lower floats	Upper floats	Transient float	Pier	Pier	Floats
Dimensions (Feet)	314x10	314x10-8	220+300x12	40 by 40	80 by 6	60 by 8
Depth Alongside at MLLW Do.	14	10	14	8	-	*
Berthing Distance Do.	See Remarks.....		300	150 w/dolphins	-	60 (See Remarks)
Total Berthing Space Do.	See Remarks.....		300	150 w/dolphins	-	
Width of Apron Do.	Open.			Open.	Open.	
Height of Deck at MLLW Do.	-			10	10, pier.	
Load Capacity (Lbs. per Sq. Ft.)	-			-	-	
Lighted or Unlighted	Lighted.			Unlighted.	Lighted.	

MECHANICAL HANDLING FACILITIES	One 2-ton, traveling, electric hoist on 20-foot horizontal boom located on wharf. (See Remarks.)	One 1-ton, electric, mast-and boom derrick with 12-foot boom.	None.
RAILWAY CONNECTIONS	None.	None.	None.
HIGHWAY CONNECTIONS	Via Startare Drive, paved, 28 feet wide, from State Highway 255, paved, various widths.	Via foot of K Street, paved, 30 feet wide, from Fourth or Fifth Streets (U.S. Highway 101), each paved, 30 feet wide.	Via foot of J Street, paved, 30 feet wide, from Fourth or Fifth Streets (U.S. Highway 101), each paved, 30 feet wide.
WATER SUPPLY (For Vessels)	Through 3/4 inch connections.	Through 3/4-inch line.	Through 2-inch line.
ELECTRIC CURRENT (For Vessels)	A.C., 110 volts.	A.C., 110 volts.	A.C., 220 volts.
FIRE PROTECTION (Other Than City)	Water line, hydrants and hand extinguishers.	None.	Hydrant, hose and hand extinguishers.
REMARKS	Lower floats: twenty-six 70-, twenty-six 60-, ninety-one 50-, and twelve 40-foot berths; upper floats: fifty-two 40-, and twenty-six 30-foot berths. A 70- by 20-foot timber pile, timber-decked wharf is located at inner end of third pier from lower side. Each berth is served by water, electricity, and 1 1/2-inch line for discharging bilge water to oil-water separator tank at rear. Transient vessels moor inside breakwater float which is equipped with two sewage pumpout stations.	At time of survey (September 1969), plans called for converting pier to non-maritime use.	Vessel *Broadbill* moors at face of floats; small craft moor at rear of face.

PIERS, WHARVES, AND DOCKS

CORPS OF ENGINEERS PORT CODE NO.	82690 Dock Code No. 240			82690 Dock Code No. 235	82690 Dock Code No. 234	
REFERENCE NUMBER OR MAP NO.	10			11	12	
NAME	Nor-Cal Seafoods, Eureka I Street Wharf.			Fishermen's Cooperative Wharf.	Humboldt Bay Harbor Cruise Dock.	
LOCATION OR WATERFRONT	Humboldt Bay, between foot of I and J Streets, extended, Eureka.			Humboldt Bay, between foot of D and F Streets extended, Eureka.	Humboldt Bay, foot of C Street extended, Eureka.	
OWNED BY	Eureka Fisheries, Inc.			Fisherman's Building, Inc.	City of Eureka.	
OPERATED BY	Nor-Cal Seafoods, Division of Eureka Fisheries, Inc.			Eureka Fisheries, Inc.	Humboldt Bay Harbor Cruise.	
PURPOSE FOR WHICH USED	Receipt of seafood; mooring fishing boats.			Occasional receipt of seafood; mooring fishing boats.	Mooring harbor excursion vessel.	
TYPE OF CONSTRUCTION	Timber pile, timber-decked wharf, with timber float extensions above and below anchored by timber piles, and connected to wharf by inclined timber ramps. (See Remarks.)			Timber pile, timber-decked wharf. (See Remarks.)	Timber pile, concrete-surfaced, timber-decked wharf fronted by timber-decked, steel landing pontoon.	
DESCRIPTION	Wharf	Upper floats	Lower floats	Wharf	Wharf	Pontoon
Dimensions (Feet)	200 by 40	100 by 6	400 by 6	570 by 40	50 by 30	20 by 40
Depth Alongside at MLLW Do.	10	10	10	12	-	12-16
Breasting Distance Do.	200	100	400	570	-	40
Total Berthing Space Do.	200	100	400	570	-	40
Width of Apron Do.	Open.			30	Open.	
Height of Deck at MLLW Do.	10, wharf.			12	Wharf, 10.	
Load Capacity (Lbs. per Sq. Ft.)	-			-	-	
Lighted or Unlighted	Lighted.			Lighted.	Lighted.	
MECHANICAL HANDLING FACILITIES	Two electric mast-and-boom derricks, each with 14-foot boom.			None.	None.	
RAILWAY CONNECTIONS	None.			None.	None.	
HIGHWAY CONNECTIONS	Via foot of I Street, paved, 30 feet wide, from Fourth or Fifth Streets (U.S. Highway 101), each paved, 30 feet wide.			Via foot of F Street, paved, 40 feet wide, from Fourth or Fifth Streets (U.S. Highway 101), each paved, 30 feet wide.	Via foot of C Street, paved, 40 fe wide, from Fourth or Fifth Streets (U.S. Highway 101), each paved, 30 feet wide.	
WATER SUPPLY (For Vessels)	Through 1-inch line.			Through 1-inch line.	None.	
ELECTRIC CURRENT (For Vessels)	A.C., 110 volts.			A.C., 110 volts.	A.C., 110 volts.	
FIRE PROTECTION (Other Than City)	Hydrant and hand extinguishers.			Hydrant and hand extinguishers.	Hydrant and hand extinguishers.	
REMARKS	At time of survey (September 1969), floats had been removed but were to be replaced in the near future.			At time of survey (September 1969) wharf was in poor condition.	Harbor cruise vessel *Madaket* moors wharf.	

CORPS OF ENGINEERS PORT CODE NO.	82690 Dock Code No. 231		82690 Dock Code No. 230	82690 Dock Code No. 229
REFERENCE NUMBER ON MAP NO.	13		14	15
NAME	Coast Oyster, Slip.		Eureka Ice and Cold Storage Wharf.	City of Eureka, Commercial Street Wharf.
LOCATION ON WATERFRONT	Humboldt Bay, between foot of A and B Streets extended, Eureka.		Humboldt Bay, below foot of A Street extended, Eureka.	Humboldt Bay, left bank Eureka Channel Inner Reach at foot of Commercial Street extended, Eureka.
OWNED BY	Coast Oyster, Inc.		Eureka Fisheries, Inc.	City of Eureka.
OPERATED BY	Coast Oyster, Inc.		Eureka Fisheries, Inc., d.b.a. Eureka Ice and Cold Storage.	U.S. Coast Guard; R.E. Davenport, Inc., d.b.a. Davenport Marine; and Pacific Choice Seafoods, Inc.
PURPOSE FOR WHICH USED	Receipt of oysters; shipment of shell; mooring company-owned floating equipment.		Receipt of seafood; icing and mooring fishing vessels.	Mooring U.S. Coast Guard vessel; fueling and mooring fishing vessels; receipt of seafood.
TYPE OF CONSTRUCTION	Timber pile, timber-decked pier fronted by 7 timber breasting piles in line with face; dredged slip on upper side, with timber mooring piles fronting natural banks.		One concrete-decked, wood barge permanently moored to timber piles; with timber pile, concrete-decked approach.	Part offshore, concrete pile, concrete-decked wharf, fronted by timber fender system; 66- by 7-foot timber approach at upper end.
DESCRIPTION	Pier	Slip	Barge	Wharf
Dimensions (Feet)	10 by 24	40 by 100	130 by 30	660 by 30
Depth Alongside at MLLW Do.	12	0 - 4	9	20-26
Breasting Distance Do.	160 w/dolphins	40	130	660
Total Berthing Space Do.	160 w/dolphins	40	130	660 (See Remarks)
Width of Apron Do.	Open.		6 and open.	25
Height of Deck at MLLW Do.	10		-	12.5
Load Capacity (Lbs. per Sq. Ft.)	-		-	200
Lighted or Unlighted	Lighted.		Lighted.	Lighted.
MECHANICAL HANDLING FACILITIES	Timber frame on pier supports 18-inch, inclined, electric belt-conveyor served by portable, 18-inch, inclined belt conveyors at rear for loading shell on barges. A 12-inch, adjustable, inclined, electric belt-conveyor system at head of slip extends to oyster processing plant at rear.		Two electric hoists, each with 12-foot boom.	Three 1-ton, electric, mast-and-boom derricks each with 16-foot boom.
RAILWAY CONNECTIONS	None.		None.	None.
HIGHWAY CONNECTIONS	Via driveway, unpaved, various widths, from foot of A Street, paved, various widths, from Fourth or Fifth Street (U.S. Highway 101).		Via driveway, unpaved, various widths, from foot of A Street, paved, various widths, from Fourth or Fifth Streets (U.S. Highway 101).	Via Commercial Street, paved, 40 feet wide, from Fourth or Fifth Streets (U.S. Highway 101), each paved, 30 feet wide.
WATER SUPPLY (For Vessels)	Through 3/4-inch line.		Through 1-inch line.	Through 3/4-inch line.
ELECTRIC CURRENT (For Vessels)	None.		A.C., 110 volts.	A.C., 110/220 volts.
FIRE PROTECTION (Other Than City)	Hydrants and hand extinguishers.		Hydrants and hose extinguishers.	Hydrants.
REMARKS	-		Two 6-inch hoses extend to barge from ice-making plant at rear; loading rate approximately 4 tons per hour. Plant has storage for 200 tons of flake ice, and 150 tons of block ice.	U.S. Coast Guard Cutter *Clover* (*WMEC292*) berths along upper 240 feet. Buildings on wharf serve as seafood handling and processing plants, and marine supply offices. One 10-inch pneumatic pipeline on wharf for receipt of fish extends into plant at rear. Three diesel fuel tanks, total capacity 720 barrels, serve fuel stations on wharf; also one 10,000-gallon gasoline tank, one 1,000-gallon lubricating oil and one 1,000-gallon waste oil tank located at rear. Wharf is served by 1 1/2-inch sewage line connected to city sewer system.

CORPS OF ENGINEERS PORT CODE NO.	82690 Dock Code No. 223			82690 Dock Code No. 210	82690 Dock Code No. 216	
REFERENCE NUMBER ON MAP NO.	16			17	18	
NAME	City of Eureka, Small Craft Harbor.			City of Eureka, Humboldt Dock B.	City of Eureka, Humboldt Dock A.	
LOCATION OR WATERFRONT	Humboldt Bay, left bank Eureka Channel Inner Reach at approximately 800 feet below foot of Commercial Street extended, Eureka.			Humboldt Bay, left bank Eureka Channel Outer Reach, approximately 1,200 feet above foot of Washington Street extended, Eureka.	Humboldt Bay, below foot of Washington Street extended, Eurek	
OWNED BY	City of Eureka.			City of Eureka.	City of Eureka.	
OPERATED BY	City of Eureka.			Point St. George Fisheries.	Louisiana Pacific Corp. d.b.a. Humboldt Dock and Shipping Co.; Oregon Coast Towing Co.	
PURPOSE FOR WHICH USED	Mooring fishing, recreational, and other small craft.			Receipt of seafood; mooring fishing boats.	Mooring company-owned tugs and fishing boats.	
TYPE OF CONSTRUCTION	Two T-shaped, parallel timber-decked, concrete float piers anchored by timber piles; each with inclined ramp at inner end, and divided into slips by additional floats on upper and lower sides. (See Remarks.)			Timber pile, part concrete-surfaced, part timber-, part concrete-decked, offshore wharf with 240- by 30-foot roadway approach to upper side. (See Remarks.)	Timber pile, timber-decked offsh wharf with 900- by 30-foot roadw approach; timber floats anchored timber piles at rear of face or upper side with inclined timber extending to wharf; mooring dolp on lower side. (See Remarks.)	
DESCRIPTION	Face (each)	Additional 8-ft floats Upper Dock	Additional 8-ft floats Lower Dock	Wharf	Wharf	Floats
Dimensions (Feet)	10 by 414	99+150+103	38151+204+108	500 by 60	375 by 40	25 & 8 by 135
Depth Alongside at MLLW Do.	16	8-16	8-16	23	30	25
Bressting Distance Do.	824, tot	704 @floats	1,530 @floats	250 (See Remarks)	375	135
Total Berthing Space Do.	824 tot	704 @floats	1,530 @floats	250 (See Remarks)	375	135
Width of Apron Do.	-			4 and open.	Open.	
Height of Deck at MLLW Do.	-			11	11	
Load Capacity (Lbs. per Sq. Ft.)	-			-	-	
Lighted or Unlighted	Lighted.			Lighted.	Lighted.	
MECHANICAL HANDLING FACILITIES	None.			Three electric mast-and-boom derricks on face; and two at rear of face; all with 15-foot booms; one 10-inch pneumatic suction hose for unloading fish.	Equipment available as required	
RAILWAY CONNECTIONS	None.			None.	Surface tracks serving lumber y at rear connect with Northweste Pacific Railroad.	
HIGHWAY CONNECTIONS	Via Waterfront Drive, various widths from Commercial or Washington Street, each paved, 40 feet wide.			Via Waterfront Drive, various widths from Commercial or Washington Street, each paved, 40 feet wide.	Via driveway, paved, various wi from foot of Washington Street, paved, 40 feet wide, from Broa (U.S. Highway 101).	
WATER SUPPLY (For Vessels)	Through 3-inch line with 3/4-inch connections.			Through 3/4-inch connections from 6-inch service line.	Through 1 1/2-inch line.	
ELECTRIC CURRENT (For Vessels)	A.C., 110/227/480 volts.			A.C., 110 volts.	A.C., 110 volts.	
FIRE PROTECTION (Other Than City)	Hydrants, 3-inch water line with 2 1/2-inch connections, and chemical carts.			Sprinkler system under deck, 6-inch water line, hydrants and hand extinguishers.	Hand extinguishers.	
REMARKS	Timber mooring piles provide additional single berths in slips formed by concrete floats.			Lower portion of wharf had been destroyed by fire prior to survey. Three treated timber fire cutoff walls were installed under deck. Only upper portion was being used for berthing. One 40- by 20-foot building on upper end of wharf serves as seafood handling and processing plant. Trucks have access to wharf.	At time of survey (September 1 wharf was in poor condition, a ing berthing for tugs and fish boats. Paved open storage are rear has capacity for 20,000,0 of lumber; and warehouse space an additional 2,000,000 FBM. *Atlas*, *Trojan* and *Thor* berthed at t floats, are used for docking a undocking vessels calling at P and also for transporting Humb Bar Pilots.	

CORPS OF ENGINEERS PORT CODE NO.	82690 Dock Code No. 210	82690 Dock Code No. 208		82690 Dock Code No. 190
REFERENCE NUMBER ON MAP NO.	19	20		21
NAME	Unocal Eureka Wharf.	Eureka Forest Products Wharf.		Chevron USA, Eureka Wharf.
LOCATION ON WATERFRONT	Humboldt Bay, approximately 650 feet above foot of Fourteenth Street, Eureka. 1200 Railroad Avenue.	Humboldt Bay, foot of Fourteenth Street, Eureka. 1206 W. 14th Street.		Humboldt Bay, approximately 400 feet above foot of Truesdale Street extended, Eureka.
OWNED BY	Unocal.	Eureka Forest Products, Inc.		Chevron USA, Inc.
OPERATED BY	Unocal.	Eureka Forest Products, Inc.		Not operated.
PURPOSE FOR WHICH USED	Receipt of petroleum products.	Shipment of logs and lumber.		Not used. (See Remarks.)
TYPE OF CONSTRUCTION	Timber pile, timber-decked offshore wharf with 250-, + 100-, by 12-foot walkway and pipeline approach; 6 timber breasting dolphins in line with face; 2 timber mooring dolphins at rear of face; all connected by catwalks.	Timber pile, timber-decked offshore wharf with 130- by 20-foot approach to lower side, 80- by 15- foot approach to center, and 100- by 20-foot approach to upper side; timber bulkhead at inner end of upper side, with offshore row of 4 timber breasting dolphins on lower side.		Timber pile, timber-decked offshore wharf, with 580- by 10-foot approach; 2 breasting dolphins in line with face connected by catwalk; 2 catwalks extend from approach to 2 mooring dolphins at rear.
DESCRIPTION	Wharf	Wharf	Bulkhead	Face
Dimensions (Feet)	60 by 16	470 by 50	65	152 by 22
Depth Alongside at MLLW Do.	28	32-36	14	24-30
Breasting Distance Do.	250 w/dolphins	470	300	262 w/dolphins
Total Berthing Space Do.	650	470	300	400
Width of Apron Do.	Open.	Open.	Open.	22
Height of Deck at MLLW Do.	10	10	10	10.5
Load Capacity (Lbs. per Sq. Ft.)	-	-		-
Lighted or Unlighted	Lighted.	Lighted.		Lighted.
MECHANICAL HANDLING FACILITIES	None.	Seven diesel, mobile front end loaders: one 35- and six 12- to 15-ton, equipped with log clamps; one 10-ton, diesel, mobile lumber carrier.		None.
RAILWAY CONNECTIONS	None.	Surface tracks at rear connect with Northwestern Pacific Railroad.		None.
HIGHWAY CONNECTIONS	Via Railroad Avenue, from Fourteenth Street, each paved, various widths, from Broadway (U.S. Highway 101).	Foot of Fourteenth Street, asphalt, various widths.		Via Howell Street, paved, 18 feet wide, from Truesdale Street, paved, 20 feet wide, from Broadway (U.S. Highway 101).
WATER SUPPLY (For Vessels)	Through 1-inch line.	Through 1 1/2-inch line.		Through 1 1/2-inch line.
ELECTRIC CURRENT (For Vessels)	None.	A.C., 220 volts.		None.
FIRE PROTECTION (Other Than City)	Hydrants, 3-inch water line with 2 1/2-inch connections, hoses, chemical carts and hand extinguishers.	Hydrant, hoses and hand extinguishers.		Hydrants, hose and hand extinguishers.
REMARKS	Three 6-inch hoses connect to three 6-inch pipelines extending to 8 steel storage tanks at rear, total capacity 110,000 barrels.	Fifteen acres of paved, open storage area at rear for 15,000,000 FBM of logs; shed and warehouse have storage for 1,500,000 FBM of lumber.		At time of survey, facility had not received petroleum products over the wharf for several years, but is maintained in operating order. Three 6-inch pipelines extend from wharf to 22 steel storage tanks at rear, total capacity approximately 100,000 barrels.

PIERS, WHARVES, AND DOCKS

CORPS OF ENGINEERS PORT CODE NO.	82690 Dock Code No. 162	82690 Dock Code No. 110	82690 Dock Code No. 069		
REFERENCE NUMBER ON MAP NO.	22	23	24		
NAME	Oregon Coast Towing Co., Eureka Oil Terminal Pier.	Humboldt Bay Forest Products, Fields Landing Wharf.	South Bay Marina Fields Landing Pier.		
LOCATION ON WATERFRONT	Humboldt Bay, foot of Hilfiker Avenue extended, Eureka	South Bay, Humboldt Bay, approximately 1,800 feet above foot of C Street extended, Fields Landing.	South Bay, Humboldt Bay, above foot of C Street extended, Fields Landing.		
OWNED BY	Oregon Coast Towing Co., A Crowley Company.	Humboldt Bay Forest Products, Inc.	South Bay Marina, Inc.		
OPERATED BY	Oregon Coast Towing Co.	Humboldt Bay Forest Products, Inc.	South Bay Marina, Inc., Fields Landing Division.		
PURPOSE FOR WHICH USED	Receipt of petroleum products.	Receipt and shipment of general cargo and dry bulk commodities; shipment of lumber and logs; receipt of fuel oil for plant consumption.	Mooring vessels for repair.		
TYPE OF CONSTRUCTION	Timber pile, timber-decked offshore wharf with 1,810- by 2.5-foot walkway approach; 4 timber breasting dolphins in line with face.	Timber pile, timber-decked offshore wharf; with one 130- by 40-, and one 130- by 30-foot, timber roadway approaches	Slip formed by L-shaped, timber floats, anchored by steel rail and timber piles on upper side and timber pile, timber-decked pier extending to L-shaped timber floats anchored by timber piles on lower side.		
DESCRIPTION	Wharf	Wharf	Upper floats	Lower Pier	Lower Floats
Dimensions (Feet)	20 by 20	600 by 40	4x60+300	20 by 160	7-10x40+52
Depth Alongside at MLLW Do.	15-35	40	0-8	0-8	8
Breasting Distance Do.	350 w/dolphins	600	60 + 300	-	40 + 52
Total Berthing Space Do.	350 w/dolphins	600	60 + 300	-	40 + 52
Width of Apron Do.	20	Open.	-		
Height of Deck at MLLW Do.	8	12	10, pier.		
Load Capacity (Lbs. per Sq. Ft.)	-	-	-		
Lighted or Unlighted	Lighted.	Lighted.	Lighted.		
MECHANICAL HANDLING FACILITIES	One mast-and-boom, and one A-frame derrick with 8- and 30-foot booms respectively, both manually operated.	Ten 15-ton, diesel, front end-loaders equipped with log clamps; others 3- to 2-ton capacity; one 1 1/1- and one 1-cubic yard, diesel, crawler cranes, with 60- and 50-foot boom respectively; and one 12-ton, diesel-hydraulic, crawler with log clamp.	One 1-ton, gasoline mobile crane with 20-foot boom and one 2-ton, gasoline, fork lift truck.		
RAILWAY CONNECTIONS	None.	One surface track at rear connects with Northwestern Pacific Railroad.	None.		
HIGHWAY CONNECTIONS	Via Hilfiker Avenue, paved, 24 feet wide from Redwood Highway (U.S. Highway 101).	Via driveway, partly paved, various widths from foot of C Street, paved, 22 feet wide from Redwood Highway (U.S. Highway 101).	Via foot of C Street, paved, 22- wide from Redwood Highway (U.S. Highway No. 101).		
WATER SUPPLY (For Vessels)	None.	Through 2-inch line.	Through 3/4-inch line.		
ELECTRIC CURRENT (For Vessels)	None.	None.	A.C., 110 volts.		
FIRE PROTECTION (Other Than City)	Hand extinguishers.	Hydrant, hoses and hand extinguishers.	Hand extinguishers.		
REMARKS	Barges up to 350 feet in length moor at wharf. Three 8-inch pipelines extend from wharf to 17 steel storage tanks at rear, total capacity 146,000 barrels.	Forty acres of open storage at rear, including 10 paved acres, has capacity for 35,000,000 FBM of logs. Four 8-inch connections on dock supply one 14-inch pipeline extending to two steel storage tanks, total capacity 132,000 barrels located at Pacific Gas and Electric Unit, Humboldt Bay Power Plant at rear.	A 70-ton marine railway is loca at inner end of slip; marine r shops and office are located at rear. Additional floats are l at head of slip.		

PIERS, WHARVES, AND DOCKS

CORPS OF ENGINEERS PORT CODE NO.	02690 Dock Code No. 080			02690 Dock Code No. 080		
REFERENCE NUMBER ON MAP NO.	25			26		
NAME	Eureka Fisheries Fields Landing Wharf.			Harbor Marine Services Wharf.		
LOCATION ON WATERFRONT	South Bay, Humboldt Bay, below foot of C Street extended, Fields Landing.			South Bay, Humboldt Bay, foot of South Bay Depot Road extended, Fields Landing.		
OWNED BY	Furbreeders Agricultural Cooperative.			Humboldt Bay Harbor Recreation and Conservation District.		
OPERATED BY	Eureka Fisheries Inc.			Harbor Marine Services, Inc.; Humboldt Bay Gravel, Inc.; and Kaiser Cement Corp. (See Remarks.)		
PURPOSE FOR WHICH USED	Occasional receipt of seafood; mooring fishing boats.			Mooring vessels and small craft for repair; shipment of gravel; and receipt of bulk cement. (See Remarks.)		
TYPE OF CONSTRUCTION	Timber pile, concrete-decked wharf; timber floats anchored by timber piles on lower side in line with face.			Timber pile, timber-decked wharf.		
DESCRIPTION	Face	Upper side	Lower side	Face	Lower side	
Dimensions (Feet)	250+200	30	5	1,500	100	
Depth Alongside at MLLW Do.	9 - 10	-	-	18-26	18-26	
Breasting Distance Do.	450	-	-	1,000	100	
Total Berthing Space Do.	450	-	-	1,000	100	
Width of Apron Do.	30			Open.		
Height of Deck at MLLW Do.	10, wharf.			10		
Load Capacity (Lbs. per Sq. Ft.)	-			-		
Lighted or Unlighted	Lighted.			Unlighted.		
MECHANICAL HANDLING FACILITIES	Two electric mast-and-boom derricks each with 12-foot boom; and one 12-inch pneumatic pipeline for unloading fish.			Humboldt Bay Gravel, Inc.: One 36-inch, inclined, barge loading conveyor belt on wharf served by conveyor system extending to open storage area at rear. Gravel is received in underground hopper by train and transferred via radial stacker to storage area, or via conveyor system direct to barge, loading rate approximately 740 tons per hour. One 3-cubic yard, diesel, fork lift truck serves yard.		
RAILWAY CONNECTIONS	None.			Two surface tracks serving open storage area and car hopper, connect with Northwestern Pacific Railroad.		
HIGHWAY CONNECTIONS	Via foot of C Street, paved, 22-feet wide from Redwood Highway (U.S. Highway No. 101).			Via driveway, part asphalt, various widths, from foot of South Bay Depot Road, asphalt, 22 feet wide.		
WATER SUPPLY (For Vessels)	Through 2-inch line.			None.		
ELECTRIC CURRENT (For Vessels)	A.C., 110 volts.			A.C., 110 volts.		
FIRE PROTECTION (Other Than City)	Hand extinguishers.			None.		
REMARKS	Seafood processing plant at rear.			Kaiser Cement Corp.: At time of survey (September 1959), plans called for installation of facilities to receive bulk cement, near Harbor Marine Services, Inc.: At rear of lower side: Two 200- by 7-foot, concrete pile, concrete-capped piers with approximately 25-foot interior clearance, serve a 150-ton, diesel, mobile vertical boatlift. Humboldt Bay Gravel, Inc.: Open storage area at rear has capacity for approximately 10,000 tons of stone.		

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OIL HANDLING AND BUNKERING

Four of the waterfront facilities described in this report are equipped to receive petroleum products by barge or by tanker, and two additional facilities fuel fishing boats. These six facilities are listed in the table below. Vessels at berth are usually bunkered by tank trucks.

P.W.D. REF. NO.	OPERATOR	BERTHING SPACE (FEET)	DEPTH ALONGSIDE (FEET)	STORAGE TANKS NO.	STORAGE TANKS CAPACITY (BARRELS)
2	Simpson Paper Co.	700+350	35-30	1	40,000(F)
15	Davenport, R.E., d.b.a. Davenport Marine	660	20-26	3	720
19	Unocal	650	28	8	110,000
21(X)	Chevron USA, Inc.	400	24-30	22	100,000
22	Oregon Coast Towing Co.	350	15-35	17	186,000
23	Humboldt Bay Forest Products, Inc.	600	40	2	132,000(F)

(F) Fuel oil for plant consumption.
(X) Not operated or used.

WAREHOUSES

Since little general cargo is handled at the Port of Humboldt, a separate warehouse survey for the port was not conducted.

OPEN STORAGE

Open storage areas at the port are used in connection with the operational requirements of the waterfront operators; these areas usually are not available to the public for storage.

HOISTING EQUIPMENT - ASHORE AND AFLOAT

Logs, lumber, and other cargo at the port are usually handled to and from vessels with ships' gear. Other cranes, derricks, and special-handling equipment on the piers and wharves within the port area are for the sole use of the operating companies, and are described under "Mechanical Handling Facilities" in the preceding table of Piers, Wharves, and Docks. No floating, heavy-lift equipment is based in Humboldt Bay.

MARINE REPAIR PLANTS AND DRYDOCKING EQUIPMENT

There are no facilities for making major repairs, drydocking, or hauling out large, deep-draft vessels at the port; the nearest such facilities are located at the Port of San Francisco, California, and are described on pages 49 through 52 of this report.

Harbor Marine Services, Inc., and South Bay Marina, Inc., and their Samoa Division, operate waterfront marine repair plants equipped to make repairs to fishing boats, tugs, recreational craft, and other types of small vessels. On South Bay at Fields Landing, Harbor Marine Services, Inc. (P.W.D. Ref. No. 26), operates a 150-ton, diesel, mobile vertical boatlift, and South Bay Marina, Inc. (P.W.D. Ref. No. 24) operates one 70-ton capacity marine railway. The Samoa Division of South Bay Marina, Inc. (P.W.D. Ref. No. 3) operates three marine railways ranging up to 300 tons in capacity.

Detailed descriptions of the existing marine repair plants, vertical boatlift, and marine railways are given in the tables on pages 90 and 91.

FLOATING EQUIPMENT

Oregon Coast Towing Co. (P.W.D. Ref. No. 18) owns and operates 3 diesel tugs and towboats with ratings up to 1,000 horsepower, which are used for towing, docking, undocking, and shifting vessels. The table below describes this equipment in detail.

Additional information on floating equipment can be obtained from "Waterborne Transportation Lines of the United States." This publication is described under Floating Equipment in the San Francisco section of this report.

OPERATOR	NAME	DIMENSIONS OVERALL		DRAFT UNDER LOAD (FEET)	HORSEPOWER
		LENGTH (FEET)	WIDTH (FEET)		
Oregon Coast Towing Co. P. O. Box 4864 Eureka, CA 95501 (P.W.D. Ref. No. 18)	Atlas Thor Trojan	76.0 61.4 76.0	27.2 18.0 22.2	10.8 14.0 10.8	1,000 600 1,000

RAIL LINES

The Northwestern Pacific Railroad, a subsidiary of Southern Pacific Transportation Co., connects Eureka to southern California. Eureka Southern Railroad serves all the logging industry docks on the north spit of the Samoa Peninsula, and connects with the Northwestern Pacific Railroad.

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MARINE REPAIR PLANTS AND DRYDOCKING EQUIPMENT

NEAREST P.W.D. REF. NO.	3			24
OPERATOR AND ADDRESS	South Bay Marina, Inc. Route 1, Box 74 Samoa, CA 95564			South Bay Marina, Inc. Foot of C Street Fields Landing, CA 95537
LOCATION OF PLANT	1483 Faye Avenue			Above foot of C Street extended.
REPAIR SHOPS AND EQUIPMENT	Carpenter, welding, painting, and sandblasting shops; 2-ton ladder truck; one 300-one 150-, and one 100-ton marine railways; Fabricating shop is located at Fields Landing (P.W.D. Ref. No. 24).			Carpenter, machine, fabricating, welding, propeller, painting and sandblasting shops; one 1-ton, mobile, gasoline crane with 20-foot boom; one 2-ton, gasoline forklift truck; one 70-ton marine railway.
NATURE OF WORK UNDERTAKEN	Above- and below- waterline repairs up to capacity of marine railways. Repair propellers; subcontract engine work.			Above- and below-waterline repairs to capacity of marine railway; subcontract engine work.
LARGEST SHAFTS PRODUCED	None.			None.
VESSEL CAPACITY AT PLANT	Three on railways.			One on marine railway, others at pier and floats.
MARINE RAILWAY				
Type				
Dimensions (Feet):	No. 1	No. 2	No. 3	
Length of cradle.....	40	35	100	60
Length on blocks.....	26	20	40	60
Clear width of cradle at top of keel blocks.....	20	20	30	17
Depth over keel blocks at MHW				
Forward.....	6	5	10	8
Aft.....	8.5	7	14	10
Hauling power (tons)	150	100	300	70
Largest vessel handled	65	55	125	65
Date built and/or rebuilt	-	-	-	-/1971
Utilities available	Water, air, and electricity.			Water, air, and electricity.

MARINE REPAIR PLANTS AND DRYDOCKING EQUIPMENT (Cont.)

NEAREST P.W.D. REF. NO.	26
OPERATOR AND ADDRESS	Harbor Marine Service, Inc. P.O. Box 338 Fields Landing, CA 95537
LOCATION OF PLANT	Humboldt Bay, foot of South Bay Depot Road extended, Fields Landing.
REPAIR SHOPS AND EQUIPMENT	Carpenter, steel and aluminum welding, fiberglass, painting and sand-blasting shops; machine, rigging, fabrication, engine, hydraulic, and propeller shops; one 150-ton mobile, vertical boat lift.
NATURE OF WORK UNDERTAKEN	Above- and below- waterline repairs to small craft up to capacity of vertical boat lift.
LARGEST SHAFTS PRODUCED	By subcontract.
VESSEL CAPACITY AT PLANT	Several at wharf depending upon size.
VERTICAL BOAT LIFT Dimensions (Feet:) Out to out of slings..... Clear width in sling..... Depth under slings at MHG Forward..... Aft..... Hauling/lifting power(tons) Largest vessel handled Utilities available	 41 27 88 8 150 115 by 27 As required.

INDEX OF PIERS, WHARVES, AND DOCKS FOR SAN FRANCISCO, CALIFORNIA

OPERATOR AND FACILITY	P.W.D. REF. NO.	MAP NO.	PAGE NO.
Allemand Brothers Boat Repair			
Pier	51	1	39
Anderson and Cristofani Pier	50	1	39
Baker Commodities, Inc.			
*San Francisco Port Commission Pier No. 92	47	1	37
Bay and Delta Towing Co.			
San Francisco Port Commission Pier Nos. 17 and 15	20	1	28
Blue and Gold Fleet			
San Francisco Port Commission Pier No. 39 West Marina Excursion Boat Landing	12	1	25
California Stevedore and Ballast Co.			
San Francisco Port Commission Container Terminal North (Pier No. 80)	43	1	36
Pier No. 35	13	1	26
*Pier No. 92	47	1	37
Continental Grain Co.			
San Francisco Port Commission Pier No. 90 Port of San Francisco Grain Terminal	46	1	37
Continental Maritime of San Francisco, Inc.			
San Francisco Port Commission *Pier No. 50, Mission Rock Terminal	35	1	33
Pier No. 54	36	1	33
Fishermen's Wharf Seafood, Inc.			
*Wharf J-7, and Pier No. 47A	6	1	23
Foreign Trade Services, Inc.			
San Francisco Port Commission Foreign Trade Zone #3			
Pier No. 19	19	1	28
Pier No. 23	18	1	27
Forest Terminals Corp.			
*San Francisco Port Commission Pier Nos. 48A and 48B	34	1	33
G.P. Resources d.b.a. San Francisco Marine			
*Fuel Dock	4	1	23
Golden Gate Bridge, Highway and Transportation District Ferry San Francisco Port Commission Ferry Plaza			
Inner Ferry Landing	25	1	30
Outer Ferry Landing	24	1	29
H & H Environmental Services			
*San Francisco Port Commission Pier Nos. 48A and 48B	34	1	33
Harbor Carriers, Inc., d.b.a. Red and White Fleet			
Pier No. 43 1/2 Ferry Docks	10	1	25
Harbor Tug and Barge, Inc.			
San Francisco Port Commission Pier No. 9	21	1	28
Marine Terminals Corp.			
San Francisco Port Commission Pier No. 27	17	1	27
Pier No. 29	16	1	27
Noonan, Fred F., Co., Inc.			
*San Francisco Port Commission Pier No. 70	42	1	35
Pacific Gas and Electric			
*San Francisco Port Commission Pier No. 70	42	1	35

OPERATOR AND FACILITY	P.W.D. REF. NO.	MAP NO.	PAGE NO.
Red and White Fleet, subsidiary of Crowley Maritime Corp.			
Pier No. 41 Excursion Boat Docks	11	1	25
San Francisco Port Commission Golden Gate Ferry Slip, Pier 1/2	23	1	29
San Francisco Bar Pilots Association			
San Francisco Port Commission Pier No. 7 1\2	22	1	29
San Francisco Fire Department			
San Francisco Port Commission Pier No. 22 1/2	26	1	30
San Francisco Port Commission			
*Fuel Dock	4	1	23
*Fisherman's Wharf, West Mooring Basin	5	1	23
**Pier No. 24	27	1	30
**Pier No. 26	28	1	31
**Pier No. 28	29	1	31
**Piers Nos. 30 and 32	30	1	31
*Pier No. 31	15	1	26
*Pier No. 33	14	1	26
Pier No. 45, Sheds A and C	9	1	24
*Pier No. 45, Sheds B and D	8	1	24
**Pier No. 84	44	1	36
Pier No. 90B	45	1	37
San Francisco Seafoods, Inc.			
*Fisherman's Wharf, Wharf J-7, and Pier No. 47A	6	1	23
Service Engineering Co., Inc.			
San Francisco Port Commission Pier No. 36	31	1	32
Pier No. 38	32	1	32
Southwest Marine, Inc.,			
San Francisco Division			
Drydock No. 2 High Water Platform	41	1	35
Pier No. 1	37	1	34
Pier No. 3	38	1	34
Pier No. 4	39	1	34
Pier No. 5	40	1	35
Stevedoring Services of America			
San Francisco Port Commission Container Terminal South Barge Mooring	49	1	38
Pier Nos. 94-96	48	1	38
United Shell Fish Co.			
*Fisherman's Wharf, East Mooring Basin	7	1	24
United States Government			
Coast Guard Station			
East Fort Baker Mooring	1	1	22
Department of the Interior			
National Park Service			
Fort Mason Pier 3	2	1	22
Hyde Street Pier	3	1	22
*San Francisco Port Commission Pier No. 45, Sheds A and C	9	1	24
Westar Marine Services			
San Francisco Port Commission Pier No. 46B	33	1	32
Western Rim Company, Ltd.			
*San Francisco Port Commission Pier No. 50 Mission Rock Terminal	35	1	33

* Various operators.
** Not operated or used.

INDEX OF PIERS, WHARVES, AND DOCKS FOR REDWOOD CITY, CALIFORNIA

OPERATOR AND FACILITY	P.W.D. REF. NO.	MAP NO.	PAGE NO.
Bell Marine Co., Inc.			
Wharf	1	2	63
Board of Port Commissioners of the City of Redwood City			
Port of Redwood City			
LASH Barge Mooring	9	2	65
*Wharves Nos. 1 and 2	2	2	63
*Wharf No. 3	3	2	63
*Wharf No. 5	5	2	64
Kaiser Cement Corp.			
*Port of Redwood City, Wharves Nos. 1 and 2	2	2	63
Leslie Salt Co.			
Salt Loading Wharf	6	2	64
Levin Metals Corp.			
*Port of Redwood City			
Wharf No. 3	3	2	63
Lockheed Shipbuilding, Inc.			
Redwood City Wharf	8	2	65
Marine Ecological Institute			
Redwood City Marine Research and Education Pier	7	2	65
Pilot Petroleum, Inc.			
*Port of Redwood City, Wharf No. 5	5	2	64
Pope and Talbot, Inc.			
*Port of Redwood City, Wharf No. 5	5	2	64
RMC Lonestar Industries, Inc.			
*Port of Redwood City, Wharves Nos. 1 and 2	2	2	63
United States Government			
Department of Interior			
Minerals Management Service, Geological Survey			
Port of Redwood City, Geological Survey, Wharf No. 4	4	2	64

* Various operators.

INDEX OF PIERS, WHARVES, AND DOCKS FOR HUMBOLDT BAY, CALIFORNIA

OPERATOR AND FACILITY	P.W.D. REF. NO.	MAP NO.	PAGE NO.
Caito Fisheries, Inc.			
City of Eureka K Street Pier	8	2	81
California, State of, Fish and Game Department			
City of Eureka J Street Pier	9	2	81
Chevron USA, Inc. Eureka Wharf	21	2	85
Coast Oyster, Inc. Slip	13	2	83
Davenport, R.E., Inc. d.b.a. Davenport Marine			
*City of Eureka Commercial Street Wharf	15	2	83
Eureka, City of,			
Small Craft Harbor	16	2	84
Eureka Fisheries, Inc.			
Fields Landing Wharf	25	2	87
Fishermen's Cooperative Wharf	11	2	82
Eureka Fisheries, Inc.			
d.b.a. Eureka Ice and Cold Storage Wharf	14	2	83
Eureka Forest Products, Inc.			
Wharf	20	2	85
Harbor Marine Services, Inc.			
*Wharf	26	2	87
Humboldt Bay Forest Products, Inc.			
Fields Landing Wharf	23	2	86
Humboldt Bay Gravel, Inc.			
*Harbor Marine Services Wharf	26	2	87
Humboldt Bay Harbor Cruise Dock	12	2	82
Humboldt Bay Harbor Recreation and Conservation District			
Woodley Island Marina	7	2	81
Kaiser Cement Corp.			
*Harbor Marine Services Wharf	26	2	87
Louisiana Pacific Corp.			
Samoa Chip Wharf	5	2	80
Samoa Wharf	6	2	80
Louisiana Pacific Corp. d.b.a. Humboldt Dock and Shipping Co.			
*City of Eureka Humboldt Dock A	18	2	84
Nor-Cal Seafoods, Division of Eureka Fisheries, Inc.			
Eureka I Street Wharf	10	2	82
North Coast Export Co., Inc., Samoa Division			
Wharf	4	2	80
Oregon Coast Towing Co.			
Eureka Oil Terminal Pier	22	2	86
*City of Eureka Humboldt Dock A	18	2	84
Point St. George Fisheries			
City of Eureka Humboldt Dock B	17	2	84
Simpson Paper Co.			
Humboldt Pulp Mill Wharf	2	2	79
South Bay Marina, Inc.			
Fields Landing Division Pier	24	2	86
Samoa Division Pier	3	2	79
Unocal Eureka Wharf	19	2	85
United States Government			
U.S. Coast Guard Station			
City of Eureka Commercial Street Wharf	15	2	83
Humboldt Bay Pier	1	2	79

* Various operators.

NOTES

MAPS

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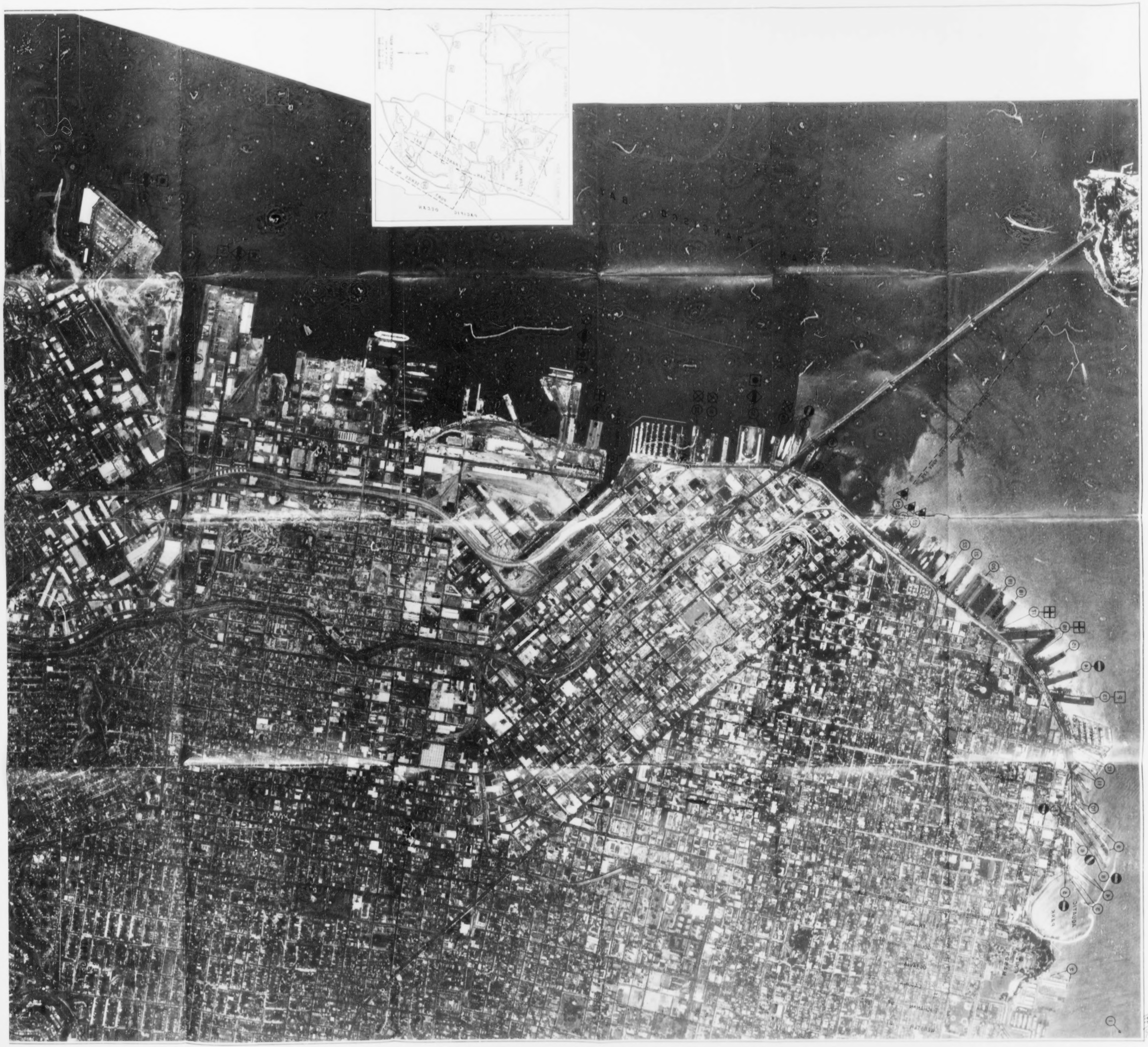
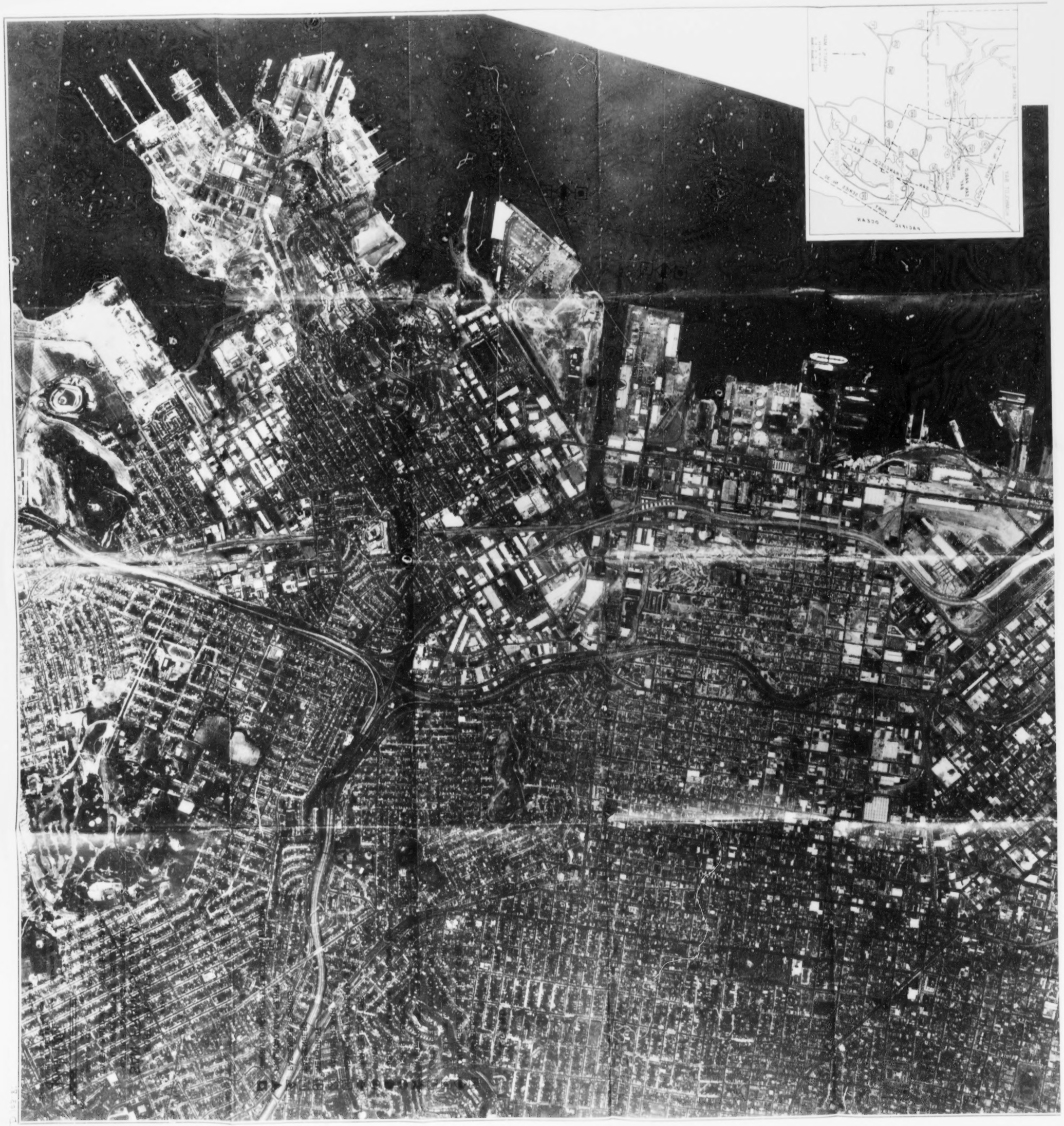
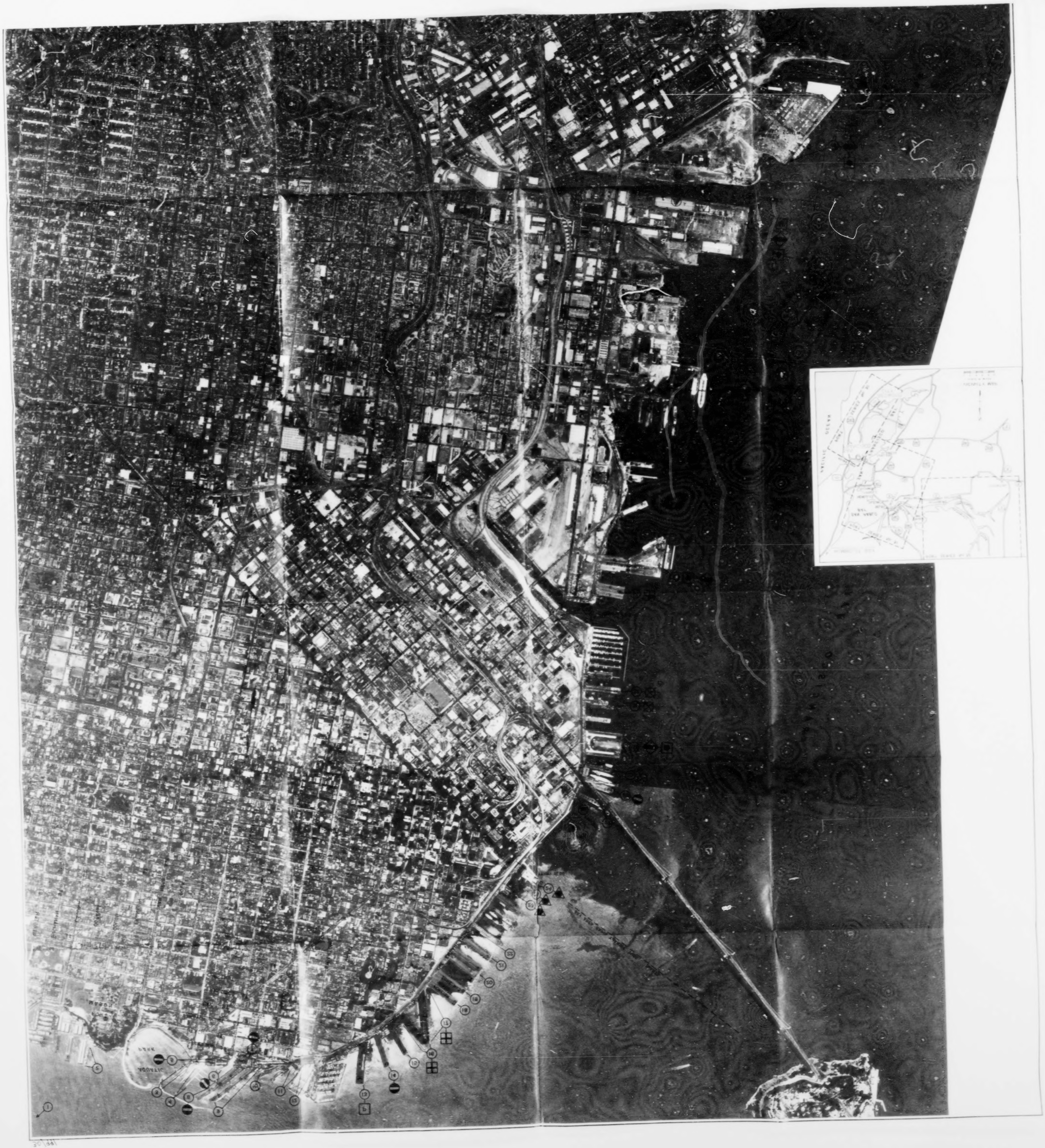
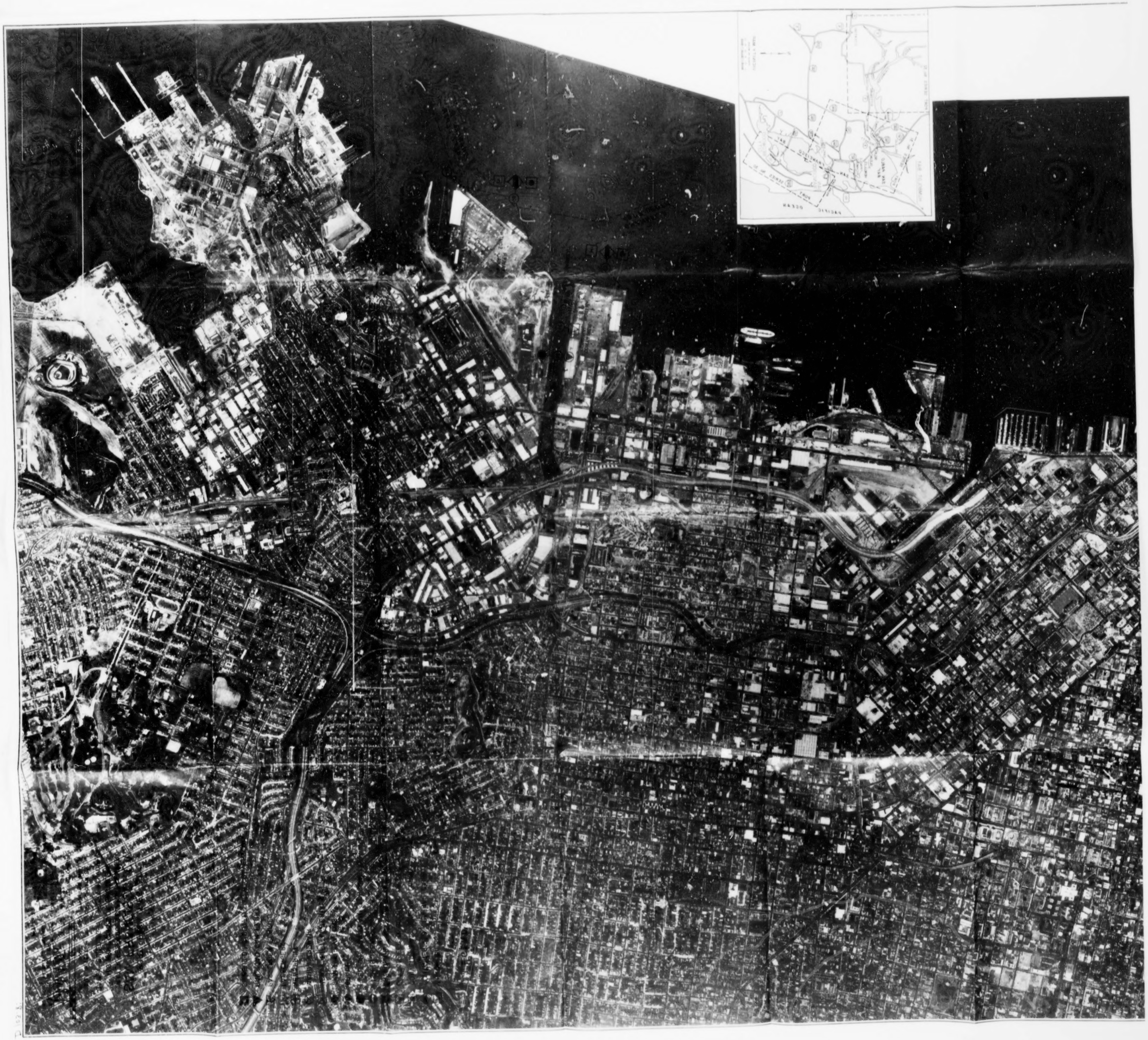
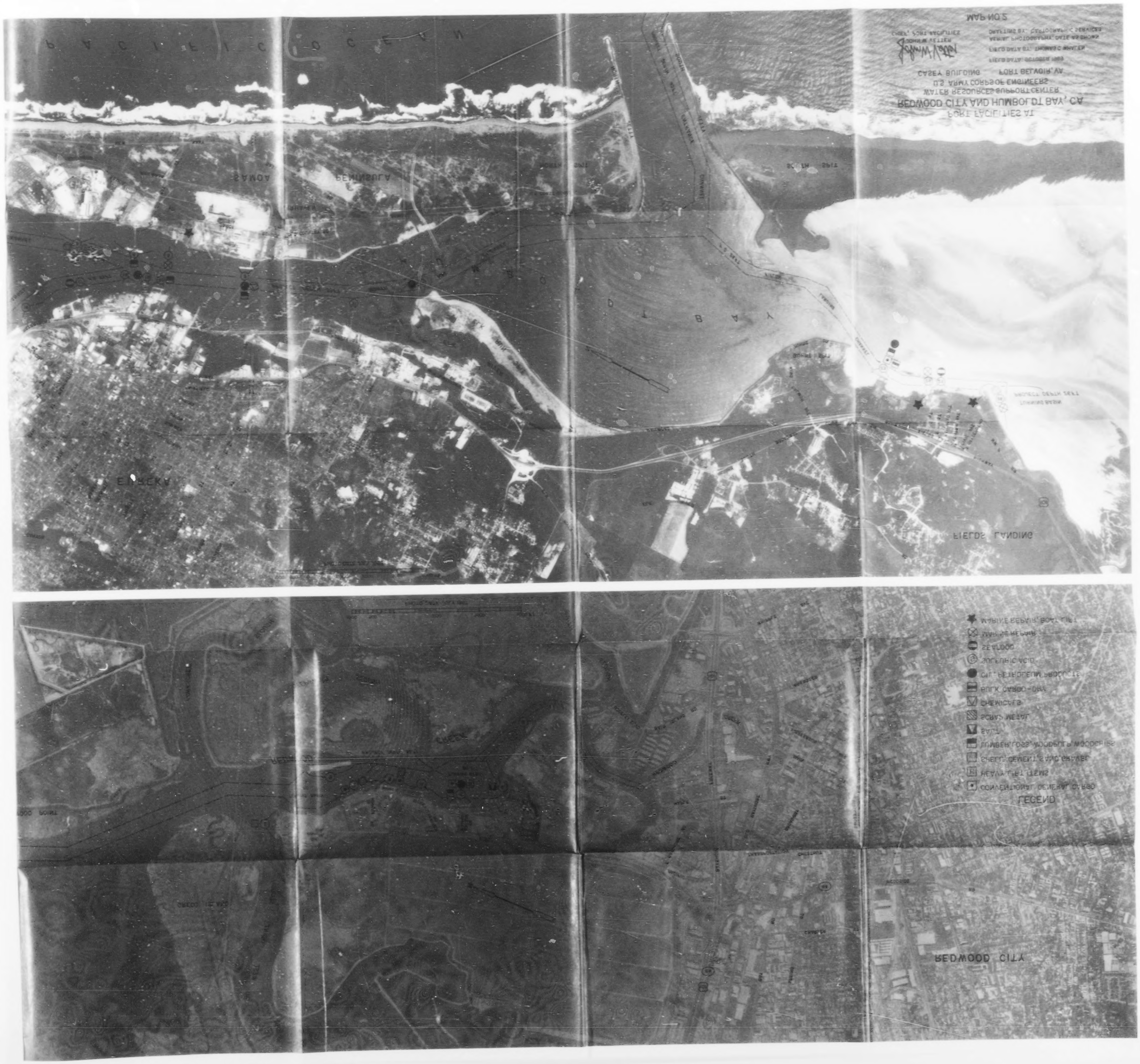





SAN DIEGO BAY
SAN DIEGO
CORONADO
NORTH ISLAND
NAVAL AIR STATION
SAN DIEGO INTERNATIONAL AIRPORT
HARBOR DRIVE
PACIFIC HIGHWAY
NORTH HARBOR DRIVE
BROADWAY
F STREET
G STREET
ASH STREET
BEECH STREET
CEDAR STREET
KETTNER BLVD.
INDIA STREET
COLUMBIA STREET
CONNECTOR
SAN DIEGO-CORONADO BRIDGE



PACIFIC OCEAN
SAMOA
FERMINDALE
REDWOOD CITY
PIERCE LANDING
LEGEND
MAP NO. 5
FORT FACILITIES AT
REDWOOD CITY AND HUMBOLDT BAY, CA
WATER RESOURCES SUPPORT CENTER
U.S. ARMY CORPS OF ENGINEERS
CASEY BUILDING FORT BELVOIR, VA



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PACIFIC
OCEAN
SAN FRANCISCO
BAY
REDWOOD CREEK
ARCATA
EUREKA
HUMBOLDT BAY
SOUTH JETTY
NORTH JETTY
HUMBOLDT BAY
PACIFIC OCEAN

PACIFIC OCEAN
SAN FRANCISCO BAY
EUREKA
ARCATA
HUMBOLDT BAY
OCEAN